

# The Boston Medical and Surgical Journal

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## Address.

### SCOPE OF PUBLIC HEALTH SERVICE.\*

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THE scope of public health service has become exceedingly broad. All the fields of the medical and related sciences form the foundation of public health work.

The purpose of public health work is to protect and promote the health of the citizens to the end that their usefulness may be increased.

The distinction between public health and private health is arbitrary and unimportant, although some diseases are better illustrations than others of the necessity for a public health service.

Lemuel Shattuck, a very intelligent layman, proposed to the Massachusetts Legislature of 1850 "An Act for the Promotion of Public and Personal Health." In one of the most remarkable public health documents ever written, now more than half a century ago, Shattuck said that "the great object of sanitary science was to teach people the causes of disease,—how to remove or avoid these causes,—how to prevent disease,—how to live without being sick,—how to increase the vital force,—how to avoid premature decay." "One of the most useful reforms," he said, "which could be introduced

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into the present constitution of society would be, that the advice of the physician should be sought for and paid for while in health, to keep the patient well; and not, as now, while in sickness, to cure disease, which might in most cases have been avoided or prevented." Shattuck was many years too early for his time, but we are fast following the lines of action that he described with such remarkable foresight.

No branch of preventive medicine has excited greater interest of late years than the study of the effects of occupation on health and length of life. Massachusetts was the first state to begin the scientific study of the physical effects of child labor in America. Owen R. Lovejoy, secretary of the National Child Labor Committee, recognized this fact when in 1912 at the International Congress of Hygiene and Demography he said: "This public service has been to some extent developed in Massachusetts, and creditable work has been done by the State Board of Health. In other states but slight beginnings can be recorded." At this same Congress, the president, Dr. H. P. Walcott, for 25 years president of the Massachusetts Board of Health, said in regard to the prevention of occupational diseases: "We should now bend all our efforts to a course of determined and persistent administration in the hands of instructed and public-spirited officers acting with all the great powers conferred by existing statutes."

It may not be amiss in this connection, in view of the importance of the subject for the protection of the community, to state that at this International Congress the Massachusetts Board of Health was awarded a diploma for superior merit

for its exhibit on the hygiene of occupations. It was the only award made on the subject to any state or municipal exhibitors. The jury, appointed by the executive committee of the congress, consisted of nine disinterested persons occupying prominent public positions, the chairman of which was Major Russell of the United States Army Medical School.

Less than eight years ago the Massachusetts Board of Health took on the scope of an investigation of work and conditions dangerous or injurious to the health of children in factories. The investigation was made by physicians. They were interested in determining the facts relating to the work and health of the children, and their efforts and results undoubtedly accomplished much good. The investigations were begun without any definite idea of paying attention to more than the sanitary conditions in factories generally, but we soon realized that the best protection of the industrial workers was to look after the children and youths in gainful occupations. There was nothing flaring about the work, which by actual growth up to 1912 directed itself towards securing the greatest possible protection for the young person, who we realized had a longer life before him than the adult and who we felt ought to be insured the best possible chances of making the most of himself without any more risk from contagion of any kind or of avoidable occupational diseases or unhygienic conditions which encouraged diseases or disease tendencies than could be avoided.

As the result of the investigations, a considerable variety of occupations were practically closed to young persons under eighteen years of age and the occupations of many children changed. Many thousands of children were examined physically and conditions of ill health pointed out to their parents or guardians.

It was impossible, however, to obtain without the coöperation and assistance of women well trained in investigating the habits and interests of young workers the really practical results that might otherwise have been obtained. This is true because the services of public health nurses and social workers are necessary for the proper education and care of young persons in industry just as they are necessary in aiding progress in dispensary work by going into the homes of the sick.

The especial usefulness of women in this capacity is to follow the children along and help them live healthier and more useful lives. It will still be the function of the health physicians, however, to correlate the injurious influences of the occupation, of the home and of the habits of the individual, for these physicians are the persons who are most experienced in preventive medicine, and as public health officials are best able to judge as to the various effects of occupation or of living conditions on health.

Recently Hayhurst, for the Ohio State Board of Health, has carefully investigated the subject of occupational health-hazards in that state. He

has defined a certain number of health-hazards which he believes to be responsible for a large percentage of preventable sickness and mortality, *e.g.* tuberculosis, cancer, rheumatism, circulatory diseases, Bright's disease, and skin diseases. He believes that deaths occurring under seventy years of age from circulatory or heart diseases should be considered preventable.

"In Ohio in 1912 over one-sixth of all deaths were due to circulatory diseases and one-eighth of all deaths to organic heart disease alone. As a cause of death tuberculosis has been almost doubly outstripped by these three chronic degenerative diseases, 58% of which have occurred before 70 years of age, and 20% of which have occurred before 50 years of age." The total number of cases of positive occupational diseases and disabilities discovered by the Ohio investigation, this last year, was more than 1200.

The health department of the city of New York has within the last two weeks added to its duties the one of studying the effects of occupation on health. A division of Preventable Diseases was established, including a central occupational disease clinic and an industrial hygiene educational division. During the interval mentioned the clinical material has exceeded that of the tuberculosis clinic. It is expected that work conducted along the lines indicated will be a potent factor in the reduction of mortality and morbidity in the city.

Among the unofficial organizations interested in the prevention of occupational diseases is the American Public Health Association, which at its last meeting voted to appoint a special committee to consider and report on the subject.

What is really happening, therefore, is that through educational reforms the public is beginning to see what a few men like Lemuel Shattuck saw a great many years ago. In Shattuck's time but few persons were educated in sanitary science; now there are many persons capable of giving good sanitary advice. Sanitary professorships are being established in all of our colleges and medical schools, and the science of preserving health and preventing diseases is taught as one of the most important subjects.

Today in our community thousands of persons who are well are seeking advice as to how to keep well. Good health is being generally recognized as lying at the foundation of success for both the individual and the community.

Persons as a rule, however, are not yet ready to pay for advice as to how to keep well, except through taxation by the agencies of government.

The United States Government, state, city, and some town agencies are distributing literature free of cost to the individual on any phase of preservation of health. Some of the more common subjects of the day, for one reason or another, are: the prevention of occupational diseases; the control of the notifiable communicable diseases; the study of the prevalence and control of venereal diseases; pneumonia; cancer; circulatory and organic heart diseases; Bright's dis-

ease; diabetes; the problem of infant mortality and child hygiene; school hygiene and the examination of school children; housing conditions; rural sanitation; and the prevention of the pollution of our water supplies.

To show one way and the extent to which some states are going in educating the inhabitants in the preservation of health, one state, at an expense of a number of thousand of dollars, issues a Mother's Baby Book bound in cloth. The book is sent by the Governor with an autographed letter to each mother after the birth of her first baby. The object of the book is to give simple and plain instructions concerning pregnancy, childbirth and the care of babies. It is intended to supplement and aid the physician, and not to prescribe medical treatment. Another object of the book is to bring about a more complete birth registration which, in turn, permits a more complete record of infant mortality.

Public health service deals with law. The rights of property and persons must be guarded. On the other hand, no person shall so use his property, or allow it to be used, as to be dangerous to the public health. Furthermore, no person shall perform any act or cause any act to be performed which shall cause or spread dangerous diseases, or which shall otherwise endanger the public health. And, finally, every person should do or cause to be done all things reasonably necessary to prevent dangerous diseases, or the spread thereof, and to protect and promote the public health.

Reasonableness of action is important. Administrative authorities, local and state, must use due caution in passing ordinances, rules and regulations.

A health board to be successful must consider and weigh carefully the reasonableness of all its acts and the omission of acts. The reasonableness of acts or the omission of acts must always be based upon facts. They should never rest upon the work of any one man or class of men. The health authority of our local community is, with rare exception, in our Commonwealth the most powerful, final authority. A local board of health actively engaged and using all its powers is comparable to a court in continuous session.

The interpretation of laws enacted many years ago and their adaptation to existing conditions is often perplexing. And yet, law must be interpreted not only in the light of the knowledge existing at the time of its enactment, but in accordance with present day enlightenment, in keeping with advancing civilization. Measures which would have been sufficient and reasonable a few years ago, owing to lack of knowledge at that time, might today in the light of existing knowledge be declared unreasonable.

In order to prevent or suppress any communicable disease, we must have a knowledge of its mode of transmission. This is essential, whether for personal prophylaxis or in the general warfare against infection.

The most common communicable diseases that

show gradually diminishing death rates in our Commonwealth are: tuberculosis, typhoid fever and diphtheria. The causes for the diminishing death rate from these diseases are somewhat complex, although it is fair to give exceptional credit to (a) the use of bacteriological and research laboratory knowledge, (b) the improvement in the purity of our water supplies and in the proper removal of sewage, and (c) the combined efforts of the laity, the medical profession and sanitarians in the practical study of good hygiene and the prevention of disease.

#### TUBERCULOSIS.

Lemuel Shattuck in 1849 stated that if tuberculosis was "ever to be eradicated or ameliorated, it can be done only by preventive means and not by cure." Dr. Fisher of Boston, an eminent professional man of Shattuck's time, said that "preventive means, when known and fully appreciated by the community, will be adopted, to a greater or less extent, and by their adoption a vast amount of human suffering and human life will be saved." This was a true prophecy.

Hiram F. Mills, for thirty years with the State Board of Health, made in 1913 an exhaustive study of what has been accomplished in the past in the suppression of pulmonary tuberculosis, the present condition in the state of Massachusetts, and the most effective methods of acting and cooperating with all the forces engaged in the suppression of this disease. Mr. Mills' plan of campaign for the suppression of tuberculosis goes to the root of the matter by removing all conditions which cause its spread and inspiring hope in sanitary measures that will prevent its recurrence. The following statistical information is found in his report:—

"Forty years ago the death rate from tuberculosis in Massachusetts was three times as great as it is now; today it has been reduced one-half in the past twenty years.

"There is no other state in the union, in which records have been kept, where the reduction of the death rate from tuberculosis has been as great as in Massachusetts.

"Furthermore, no other country in the world has done such effective work and accomplished so much in decreasing the number of deaths from tuberculosis per 100,000 of population as has the Commonwealth of Massachusetts."

In the further suppression of this disease the work of district nurses, public health nurses and social workers under the supervision of both state and local health authorities is strongly recommended in connection with the establishment and maintenance of tuberculosis hospitals and dispensaries.

#### TYPHOID FEVER.

About two years ago, at the suggestion of the reader, a special committee of state health officers, acting under his supervision, in-

investigated the prevalence of typhoid fever in Massachusetts to determine what aggressive work might be inaugurated in our Commonwealth in order to reduce the typhoid mortality rate. It was found, from figures compiled by A. J. McLaughlin in the Public Health Reports, that the typhoid mortality rate showing for this country, as compared with the rate for certain cities of northern Europe, was far from flattering. The registration area of the United States had an average mortality rate for the years 1901-1909, inclusive, of more than six times the 1910 rate for the European cities. Many European localities had reduced the average mortality from typhoid to about 4 per 100,000. The result was equally unfavorable in making a comparison with the cities of this country. Of the 50 registration cities of the United States, with a population of 100,000 or over, in 1910, but 4 had a typhoid mortality rate of 9.5 per 100,000 or less.

The Massachusetts rate for the years 1908-10, the lowest typhoid mortality rate for 25 years, was nearly three and a half times higher than the low average European rate mentioned. While, however, there are and have been in these northern European countries fewer deaths from typhoid fever per 1000 inhabitants than in Massachusetts, the death-rates in Massachusetts have decreased more than in any one of those countries, and have decreased twice as much as the average of them all.

The committee found many difficulties having to do with the agencies through which the infection is spread, and recommended state-wide legislation for bringing up to a proper standard the health work in those communities as yet not sufficiently active or organized. The proposed legislation, however, has not been forthcoming. They were of the opinion that carriers should be restrained from handling all food products whether in dairies, kitchens or dining rooms. They were also of the opinion that "the physician who does not report a case of continued fever as a probable typhoid as soon as he has eliminated other common causes, and who does not in such a case take appropriate precautions, must shoulder very serious responsibility to the community for any subsequent results in the community.

In the past twenty-five years, while the population of Massachusetts has increased 67%, the deaths per year have increased but 30% and the death rates have decreased from 19.83 to 15.42, or 4.41 per 1000 living.

In the twenty years previous to the organization of the late State Board of Health there had been but little permanent change in the death rate in the state. The average death rate in that period was 19.33 per 1000 and in the last five years of the period it was no less than the average.

In the first twenty years of the work of this board the death rate decreased from 19.83 per 1000 to 16.33, or there were at the end of this

period 16% fewer deaths per 1000 per year in the state than at the beginning.

Mr. Mills, commenting on the causes of the diminished death rate, laid the greatest stress upon the purification of our water supplies. "Other elements," he said, "have entered into the problems which have in the past been of less importance, but now that so much has been done in the improvement of water supplies, the other elements, especially the improvement of the milk supply, assume increased importance in decreasing the deaths now caused by typhoid fever and other germ diseases."

The year 1914 is noteworthy for considerable diminution in the typhoid death rate in the country. Forty-one cities had a lower rate than in 1913 and 17 a higher; 24 cities had a death rate under 10 in 1914 as compared with 19 in 1913.

The two Massachusetts cities, with a population of over 100,000 having a death rate under 5, were Worcester and Cambridge.

While there has been a steadily diminishing mortality from the disease in this state there is great need of the combined efforts of the health authorities and the public in bringing about its eradication.

#### DIPHTHERIA.

The discovery by Behring of the antitoxic power of the blood in animals treated with diphtheria toxin, and the successful attempts of Behring, Roux and others to produce antitoxin on a large scale, led Dr. H. P. Walcott, chairman of the State Board of Health, in 1894, to consider the advisability of establishing a laboratory for the production and free distribution, under state supervision, of this preventive and curative serum.

It is unnecessary to make more than a brief comment on the value of the prompt use of antitoxin for both its curative and preventive effect. The striking difference in the fatality from diphtheria, according to whether antitoxin is administered early or late in the disease, is well known.

In the pre-antitoxin period, for the years 1891-1894, the total fatality per cent. from diphtheria was 28.3; during the antitoxin period for the years 1895-1913 the total fatality per cent. was 10.8.

With the intelligent co-operation of the medical profession and the general public, the control and prevention of diphtheria is feasible. We must, however, have a knowledge of its prevalence and a better knowledge of its causation. We all know of the occasional outbreaks of positive bacteriological cases with no clinical symptoms, in other words, of the frequent finding of diphtheria bacilli in healthy throats. Whether such outbreaks are due to certain meteorological conditions, favoring the activity of the bacilli, seems to be a proper subject for further inquiry. Personally I am inclined to give



weight to such a theory rather than believe that all cases result from direct case-to-case infection. I believe that every case of positive culture ought to be carefully investigated by a local health official and full records kept in the local office for ready access to the state health officers, so that the efforts of the bacteriologist and investigators may be combined in the interest of more accurate knowledge as to the control and prevention of this disease.

From 60% to 70% of all deaths from diphtheria occur in children under five years of age.

All cases of sore throat should be carefully watched, and, if more than one case occurs in a family, it should be regarded as suspicious.

Immunity in diphtheria is generally incomplete and of short duration. It lasts from a month to several years, varying greatly in different individuals, and being very brief in children.

Schick has recently proposed a simple clinical test for determining whether a person is more or less immune to diphtheria or whether a state of susceptibility exists. The most practical application of Schick's test, according to Kolmer and Moshage, "consists in applying the test as a preliminary measure to all persons who have been exposed to diphtheria, and immunizing only those who react positively." The test is "based on observations of von Behring that as little as one-hundredth of a unit of anti-toxin per cubic centimeter of our serum will protect a person against diphtheria."

Bundesen of the Chicago Health Department points out that the use of the Schick test "permits a great reduction in antitoxin bills, that much needless pain and annoyance of patients is avoided, and that the possibility of anaphylactic shock is greatly minimized."

#### MEASLES.

In the year 1910 over 11,000 American children died from measles. This number did not include the great number of children who died from broncho-pneumonia, a disease which is so frequently caused by measles. When it is considered that measles occur most often during the school period it will be seen that thousands of children are kept from school for weeks at a time on account of this disease. Leaving out of consideration the death and suffering caused by so many children stricken with measles, the economic loss is a most serious one.

Measles is now regarded as a preventable disease, yet in Massachusetts, in 1913, there occurred 315 deaths from this cause. In Illinois, during the year previous, there occurred from measles more than 650 deaths.

W. C. Rucker of the United States Public Health Service, commenting on the ravages caused by measles, said: "It is little less than criminal to permit children known to have measles to come in contact with well children. . . It is the duty of private citizens and

municipalities to take every known measure for the prevention of the spread of this disease."

The administrative control of measles remains one of the most baffling problems with which we have to deal.

#### SCARLET FEVER.

The essential features of the prevention of scarlet fever consist in isolation and practical disinfection. While scarlet fever is not so highly contagious a disease as measles, both diseases must be dealt with from a public health view point in practically the same way. Until more exact knowledge is obtained concerning the channels of entrance and exit of the virus and its mode of transmission, public health authorities will be more or less handicapped in its control. The period of isolation is necessarily more or less arbitrary in scarlet fever for we have no accurate way of determining just how long a child remains infective.

#### WHOOPING COUGH.

Dr. John Lovett Morse in "A Plea for More Efficient Public Regulations Relative to the Control of This Most Serious and Fatal Disease," called attention to the fact that whooping cough is almost everywhere more fatal than scarlet fever and less fatal than diphtheria. In 1911 the reports from thirty states showed that 6251 died from whooping cough, 4323 from scarlet fever, and 9579 from diphtheria. During the same period in eleven states where 1216 children under five years of age died from whooping cough, 3860 children under five years of age died from bronchitis and broncho-pneumonia. While it was impossible to know in how many cases the bronchitis and broncho-pneumonia were secondary to whooping cough, Morse pointed out that they were undoubtedly due to it in a considerable proportion of them. He showed by statistics the lack of proper regulations relating to the isolation of children ill with measles and to the exclusion from school of other children in the family; of the scanty provisions for the hospital treatment of whooping cough in this country; and of the lack of a general rule as to the management of children with whooping cough in out-patient and dispensary clinics. Morse emphasized the need of making strenuous efforts to diminish the terrible mortality from this disease. He said (1) "It is fair to assume that the disease is transmitted by the secretions of the respiratory tract and that, while most contagious during the catarrhal and early weeks of the spasmodic stage, it is also contagious throughout the whole of the spasmodic stage. (2) Since about 95% of the deaths from whooping cough occur during the first five years and the great majority of these in the first two years, the most important thing is to keep babies and young children from having the disease. (3) It can be confidently predicted that when the physicians and the public understand what

whooping cough really means, when proper regulations for its control are established and enforced, and when sufficient hospital accommodations for its care are provided, whooping cough will cease to be the scourge which it now is."

#### MALARIA.

Malaria is another of the most prevalent of the preventable diseases. Owing to the lack of morbidity statistics relating to this disease, however, it is impossible to make a specific statement regarding its prevalence.

Rosenau states that "despite the fact that we have more exact knowledge of malaria . . . than perhaps any other disease, despite the fact that we have accurate means of diagnosis and a ready cure, and despite the fact that we have assured measures of prevention, malaria counts its victims by the hundreds of thousands annually."

Malaria was added to the Massachusetts list of notifiable diseases last September, so that now all cases of the disease must be promptly reported by physicians to the local boards of health and all deaths from malaria are required to be reported weekly by local boards of health to the State Department of Health. We shall have soon, therefore, in Massachusetts, reliable morbidity and mortality statistics on malaria.

Among the diseases not classified in our Commonwealth as dangerous to the public health, hence notifiable to the health authorities, but claiming the attention of the public as preventable, are (1) pneumonia and (2) the venereal diseases.

#### PNEUMONIA.

Pneumonia is one of the most widely distributed and fatal of the acute communicable diseases. According to the U. S. census, more than 10% of all deaths in the registration area of the United States were due to pneumonia. And yet this disease now claims our attention as a *preventable* disease.

For the year 1913 there were returned to the State Department of Health of Massachusetts 6112 deaths from pneumonia and broncho-pneumonia as compared with 5965 deaths for the year 1912.

Seasonal prevalence in 1913 showed the greatest number of deaths from pneumonia in February and March and the smallest number in July and August. This shows that deaths from pneumonia occur mainly during those months when people live in closed houses. The control of pneumonia involves a careful study of the localities, including the industrial communities, and the conditions under which people live and work. The assistance of district health officers, local health officials, nurses and physicians in making such a study or survey is essential in bringing about the decrease in death rates from this disease.

#### VENEREAL DISEASES.

It would be difficult to mention any one disease that is of so much importance to the public welfare as the venereal diseases. The time is long since past for neglect and silence concerning them. We should institute a rational and vigorous educational campaign in order to bring into the homes ideas that cannot fail to have influence.

There is at present no method of getting accurate reports of the occurrence of cases of venereal diseases. The American Public Health Association has appointed a committee to study and report upon the problem, and the American Social Hygiene Association in New York City has been organized as a national clearing house. Dr. William F. Snow, secretary of this association, states that within the last two years important advances have been made in placing the movement on a sound basis, and that the campaign against venereal diseases has extended to such problems as the control of cancer and the promotion of mental hygiene. A number of state and city health authorities have instituted some important measures. Blaisdell quotes New York City statistics as probably representing as accurate an estimate of the amount of syphilis in a given community as any now available. During the fourteen weeks from July 4 to October 3, 1914, 25,633 infectious diseases were reported in the city of New York, with a population of a little over five and one-half millions. Syphilis stood first on the list with 6342 cases, or 28%; tuberculosis second, 5525 cases, or 21%; diphtheria third, 3370 cases, or 13%; measles fourth, 2750 cases, or 11%; and scarlet fever fifth, 1064 cases, or 4%. Blaisdell, in a study of 60 cases of fresh syphilis in the Skin Department of the Boston Dispensary, found that these 60 patients had exposed 1227 people,—134 by coitus, 442 by family or boarding house life, and 651 by occupational association. The amount of syphilis in Massachusetts today is unknown, and the only index that we have of its prevalence is from the records of hospitals and other institutions. Reports received in the Massachusetts Department of Health from 34 hospitals in the state show, for the year 1914, 4068 cases of syphilis and 3062 cases of gonorrhea.

The Boston Dispensary and some other institutions have established social service work with venereal disease cases. Michael M. Davis, Jr., director of the dispensary, believes that the reporting by public medical institutions to the State Department of Health of cases of syphilis and gonorrhea would be beneficial if properly administered. The records should not be open to public inspection and should be kept only by specified officials of the department. Davis gives three reasons why such reporting would be of value, viz.: "First, gonorrhea and syphilis can only be successfully dealt with from the public health standpoint when they are regarded as contagious diseases rather than as venereal dis-

cases; second, reporting will give the physicians, administrators, and trustees of hospitals and dispensaries a much sharper sense of responsibility for keeping their patients under treatment and for securing medical examination, and, when necessary, treatment, for the members of the patients' families who have been exposed to infection. The out-patient clinics of Boston alone receive several thousand new cases of syphilis and gonorrhea annually. That these clinics should feel their public responsibility in this matter and make it effective by proper action, as can be done in a large majority of cases without insuperable difficulty, is extremely important in the campaign against these diseases and I believe that reporting by name would be useful as a stimulus to these institutions. Third, while reporting cases merely by number would be useful because of the educational effect upon the public of the statistics gathered, and would be better than no reporting at all; reporting by name is the reasonable and ultimately necessary method, and is not open to serious objection if properly administered. E. E. Southard, commenting on a series of 6000 Wassermann tests for syphilis performed in the Harvard Neuropathological testing laboratory, states that it is clear that the percentage of outstanding syphilis is not so high as alarmists sometimes think, and that it is probably far below 23%. He gives 15% as the approximate percentage worked out for the Psychopathic Hospital intake which, he says, corresponds to the idea prevalent among dermatologists as to the general percentage in the community which they deduced from cases in skin clinics.

Southard believes the Wassermann method of diagnosing syphilis of such value to the community that a community Wassermann service might well be undertaken by a State agency. I may say that a State law with reasonable appropriation has now been enacted to enable the State Department of Health to develop such a service.

W. G. Stimpson of the United States Public Health Service reports on the treatment with salvarsan or neosalvarsan of 430 cases of syphilis, that there is no question of their great benefit to mankind. Many persons, he says, who were partially or totally disabled, have regained their health after the administration of salvarsan and have returned to work. He, however suggests caution in using it in tertiary forms of the disease.

Frederick H. Baker, in a paper read at the January, 1915, meeting of the Massachusetts Association of Boards of Health, said in conclusion: "I should like to see appointed a committee from this association on the control of venereal diseases. I should like to see this committee, among other things, consider especially:

"1. The advisability of making syphilis and gonorrhea reportable diseases.

"2. The advisability of securing the passage of a law making these records private records.

"3. The advisability of the committee conferring with the health commissioner of this state to secure the establishment of a state Wassermann laboratory, a laboratory to which the workers in the municipal laboratories could go to improve their knowledge, and to establish a uniform technic throughout the state.

"4. The advisability of securing the passage of a law compelling public institutions to treat acute venereal disease."

Of the reportable diseases, special reference should be made to ophthalmia neonatorum and rabies; the former unprevented and untreated leading to blindness; the latter, unprevented, to a most excruciating death.

#### OPHTHALMIA NEONATORUM.

Ophthalmia neonatorum is a preventable disease and its prevention is a very simple matter, and yet it has been estimated that about one-fourth of all cases of blindness are due to this disease, and that the annual cost to the people of the United States to care for those who are blind from this cause is about \$7,000,000. The preventive treatment of this disease is familiar to you all,—that of cleansing the eyes of the new-born infant and dropping one or two drops of silver nitrate or argyrol solution into each eye. The state boards of health now pretty generally make such treatment available for physicians, and when it is universally employed there will be a marked reduction of blindness in children, and the country will be saved many millions of dollars.

Efforts have been made by our state physicians in Massachusetts to make sure that the infants were receiving proper medical and nursing care. Physicians have been made to account for failure to report cases of the disease. Ignorance of the law requiring such cases to be reported; ignorance of proper methods of treatment, and carelessness on the part of local boards of health, physicians, nurses, midwives and parents, have been observed. There has been noted an improved condition on the part of many boards of health and physicians as to the recognition of the seriousness of this disease and its ultimate results if neglected or improperly treated. There has been also observed an increasing tendency upon the part of some physicians, as a routine method of treating the disease when it appeared, to use the silver nitrate prophylactic provided by the State Board of Health as a preventive of this disease. In a few cases this treatment was followed by an increased activity of the inflammation. Certain physicians appeared not to consider a case as having a discharge until the eyes were literally overflowing with thick pus. The prophylactic furnished by the State Board of Health is being used more frequently. The public is fast becoming educated to the desirability of its use, and is inclined to criticize the physician for failure to use it if the eyes later become inflamed.

As the result of an energetic campaign of the State Board of Health, carried on since 1909 through the State Inspectors of Health in co-operation with the Massachusetts Commission for the Blind, the percentage of blindness due to ophthalmia neonatorum has been reduced in the state of Massachusetts at least 50%.

#### DOG BITE, RABIES AND PASTEUR TREATMENT.

The treatment by the Commonwealth of cases of dog bite, by dogs known to be rabid, was introduced under my supervision last summer while Acting Commissioner of Health. Cases of dog bite had been increasing in Massachusetts and many people were unable to get prompt and proper care. Persons had died from rabies without receiving the Pasteur treatment.

Since May, 1914, the State Department of Health have received notice of 212 cases of dog bite. Of this number, 68 persons were known to have been bitten by rabid dogs. Fifty-three of the 68 persons were given the Pasteur treatment by our district health physicians.

There were six fatal cases, only one of which was given the Pasteur treatment. The other five persons either did not appreciate the importance of the Pasteur treatment, or, owing to unavoidable reasons, were not reached early enough for treatment.

Arrangements were made with the Hygienic Laboratory of the Public Health Service at Washington to supply the anti-rabic virus to the State Department of Health, and in every case the virus was administered in accordance with the stipulations of the Hygienic Laboratory.

It is optional with physicians as to whether they procure anti-rabic virus from New York or elsewhere and themselves give the Pasteur treatment, or whether they desire to have the state health officers administer free the virus furnished by the United States Hygienic Laboratory.

The Washington virus, as now sent to our department, is in the form of small pieces of rabbit cord, which must be emulsified before it is used. It is hoped that in the near future the State Department of Health laboratory will make and furnish the virus in such form as to be practicable for the use of practising physicians.

Now just a word as to the protection of water supplies and the disposal of sewage; the correlation of school and community health work; improvements in housing conditions; and infant mortality and child hygiene.

#### WATER SUPPLIES AND SEWERAGE.

The prevention of the pollution of our domestic water supplies is an important sanitary and economic problem that receives much attention. The wastes of human life concern us especially,—feces, urine and sputum. These may enter the surface water directly in various ways.

The work of the Massachusetts State Board of

Health relating to water supplies and sewerage systems has had such a well recognized value as to need no special comment.

#### THE CORRELATION OF THE WORK OF SCHOOL PHYSICIANS AND LOCAL AND STATE HEALTH OFFICIALS.

It is essential that there be a thorough and well-supervised system of school health work. It is further essential that there be a practical correlation of the school and community health work.

One of the most practical questions that arises during epidemics of disease is the question, "Shall we close the schools?" In the current Bulletin of the United States Bureau of Education containing contributions from American medical journals on "The Health of School Children," Francis George Curtis concludes from his experiences "that keeping the schools open offers the best chance of safety for the scholars, both collectively and individually." "If the schools are kept open," he says, "and the children continue in the class-rooms as usual, they are under strict observation and examined daily by the school physician, suspicious and infected cases being sent home for observation or treatment." In this way, Curtis believes, "many children are sent home before they have had an opportunity to infect others, thus reducing the probability of spreading infection. Further than this, the attention of the parents is called to the fact that the child is feeling ill and he is brought under treatment earlier."

Among some of the urgent problems of the day are those relating to (a) the medical inspection of children in rural schools, (b) the age and seasonal incidence of diseases of children, (c) the prophylaxis of measles, (d) vaccination, (e) cardiac disease in childhood, (f) tuberculous bronchial glands in children, and (g) the care of the eyes of school children. These and all such problems indicate the need of state advisory supervision of school and community health work. It would insure local supervision of the medical inspection of schools, regardless of whether that work is controlled by the school committee or the board of health; it would preserve local interest and initiative in all health work; and it would bring the state educational and health authorities together on a problem that demands combined action in the interest of the public welfare.

#### HOUSING CONDITIONS.

Closely allied to the study of infant mortality is the one of providing sanitary homes for the least resourceful people. The question, "What constitutes a home unfit for human habitation?" is one that health officials everywhere would do well to keep constantly in mind.

Time and again, as Kober has pointed out, it has been shown that high mortality rates have appeared hand in hand with unsanitary



and overcrowded homes. "In some cases the general death rate for large groups of population living in unsanitary dwellings amount to double or even treble what might be called the normal death rate. On the other hand the vital statistics of London show that the death rate in the improved dwellings for wage earners is far below the general mortality of the city, and the experience of housing companies in the United States, notably in Washington, D.C., is quite as gratifying."

We cannot but view with satisfaction the great developments that are taking place in municipal housing. Improvements in housing conditions and sanitation generally give rise to the best results in checking the ravages of tuberculosis and many other infectious diseases. As Thomas Gibson, of England, tersely says: "Clean houses, clean courts and streets, clean drains and clean sewers, clean water and clean food, clean air and clean bodies represent the consummation of the sanitary ideal."

#### INFANT MORTALITY AND CHILD HYGIENE.

Second to none in importance is the branch of public health work which reduces infant mortality. In carrying out this work we must have correct vital statistics. Unfortunately our infant mortality rates are not in general of a character which make it possible to arrange, analyze, combine and obtain proper deductions and conclusions from them in such form as will contribute most to the improvement of practical life. Some communities, however, possess statistics accurate enough to enable competent observers to draw conclusions which show results of an encouraging character.

Among the specific problems of infant mortality must be mentioned those relating to the production and distribution of clean milk, artificial versus breast-fed children, imperfect feeding and drugging of infants, married women workers in factories, maternity and factory labor, and housing conditions.

The Visiting Nurse Association of Boston did pioneer work on such prenatal care, having begun in 1901 to instruct pregnant women in suitable care and hygiene.

Emmons and others are emphasizing the fact that prenatal care is fairly to be considered a part of preventive medicine, and that the health authorities should lay plans for the prevention of death, disability and weakness from inefficient care during pregnancy and confinement. Emmons reports that Pittsburgh has recently been given \$3,000,000 to equip a maternity plant consisting of a modern hospital with local dispensaries and all the necessities for a complete service to the city.

Williams, in a study of 705 fetal deaths occurring among the white and colored races, in 10,000 consecutive admissions to the John Hopkins' Hospital, found that syphilis was the most common single etiological factor concerned, in that it was accountable for 186 of the 705 deaths

26.4%. He observed that it was more frequent in the colored than in the white race, the incidence being 35% and 15%, respectively, and that it must receive important consideration in the reduction of infant mortality.

Holt and Ellen C. Babbitt in a report on 10,000 consecutive births at The Sloane Hospital for Women, New York City, state that congenital weakness and atelectasis together made up 58% of the total deaths, that still-births must be reckoned as one of the large problems in infant mortality, and that except for the larger rôle played by syphilis, the causes of still-birth in no way differ from those which produce death during the first days of life. They believe that the great number of deaths from congenital weakness can be reduced only by care of the mother during her pregnancy. The only important disease developing after birth was pneumonia. Holt says that the campaign to reduce infant mortality is essentially a campaign of education and that the two greatest agencies are: (1) the visits of the nurse to the home and (2) the attendance of the mother at the infant welfare station. In New York City, he says, there has been a reduction in infant mortality of 30% in five years and a steady fall among infants in the summer.

Knox of Baltimore states that "tuberculosis is only two-thirds as destructive for people of all ages as are the conditions which produce the high death-rate during the first year of life." He mentions three fundamental rights of infants which if allowed will save thousands of babies now born weak or prematurely. These rights or conditions are: (1) that the parents must be healthy, (2) that the mothers should be better cared for during pregnancy, and (3) that the labor must be skillfully conducted.

While many other diseases or affections might have been referred to, and many problems relating to health considered, as for example, the use and abuse of foods and drinks, habits of living and other influences on health and longevity, I have aimed to present in a general way such a number and variety of problems as are now dealt with by the majority of public health officials in communities like our own.

The so-called "new idea" of securing health and happiness through public hygiene and preventive medicine is but an awakening of the general public to the value of being taught the causes of disease with the view of removing or avoiding these causes and living without being sick.

"The public," as Lovejoy declares, "must put an end to incompetence or self-interest in its public-health service, and we submit that medical associations, state boards or departments of health, physicians, and experts in hygiene,—those who best know the facts,—must serve as pioneers in demanding that the public health department shall be elevated to its rightful place, and be made the most important arm of city, county or state government."

Health work is not a matter of merely local, but of national and international, interest and importance. Local interest, however, comes first and must be maintained. The modern tendency in health administration is from local to national and international rules and regulations which insure uniformity of action. "Health work," as the Public Health Committee of the New York Academy of Medicine recently declared about quarantine work, "is essentially scientific in its nature, and cannot be carried on efficiently unless tenure of office is independent of changes in administration and of politics."

### Original Articles.

#### THE OPERATIVE TREATMENT OF FRACTURES.\*

By CHARLES L. SCUDDER, M.D., BOSTON.

THE presence of practitioners of both medicine and surgery at this 70th Annual Meeting of the Medical Society of the State of Ohio offers a fitting occasion for the consideration of the treatment of fractures of bone.

Several important events have profoundly influenced the treatment of fractures. The introduction of ether anesthesia in 1846 made possible painless attempts at the setting of fractures. About twenty-five years later the development of asepsis assured the safe care of compound fractures. Still twenty-five years after this the Roentgen ray demonstrated to surgeons that the supposed complete reduction of a fracture was in many cases but a caricature of reduction. And again, after twenty-five years, autogenous bone grafting is affording a sure treatment for ununited fractures.

Thus these four general factors—anesthesia, by producing painless relaxation; asepsis, by preventing infection; the x-ray by visualizing the fractured bones; and bone grafting, by stimulating the reparative process—these four factors have had a direct bearing upon the development of fracture treatment during the past seventy years.

This is not the time or place to enter upon a discussion of the technical details of fracture treatment, however much there may be of interest and of practical value in such discussion. I would call your attention rather to certain general considerations in order that we may better understand the trend of the treatment of these injuries to bone, and that we may thus arrive at conclusions which will prove helpful in establishing a better therapy.

It is unnecessary to demonstrate to this audience that the present methods of treating frac-

tures are unsatisfactory. We are aware of this fact from our own private experience. Those of us fortunate enough to be connected with hospitals where such injuries are received for treatment are convinced that this is true from our larger hospital experience.

Why are present methods of treating fractures unsatisfactory? The answer is—Because the functional results are so often poor. We all know of this from common observation.

Previous to a few years ago all fractures were treated by a non-operative expectant method. The x-ray finally disclosed that the real reason why the functional results were so poor was the faulty setting. Surgeons were not then acutely aroused by this disclosure of the x-ray. The surgical mind has been occupied during recent years with many other problems brilliant in prospect and remarkable in achievement. The study of methods for the improvement of fracture results has therefore been postponed. There has been little real interest on the part of the profession in this subject. Consequently the results have continued poor.

Certain events have directed attention to fractures. The large social movements for betterment have stumbled upon many poor results of fracture. Familiarity of the layman with x-ray plate interpretations has led the fracture patient, often improperly, to demand a better setting of the fractured bone. The admission of the x-ray plate as evidence in court has undoubtedly had a compelling influence. The Workmen's Compensation Act has directed attention to the financial loss due to fractured bone. It is necessary under the law to determine the elapsed time between the accident and the return to normal work. This time away from the earning of a living wage is the economic measure of the efficiency of fracture treatment.

The esthetic standard of the past and the perfunctory record of accomplishment must give place to the economic standard of early functional usefulness and the accurate record of events and conditions from the receipt of the injury to the resumption of full time work.

In other words, a demand has been made upon the surgeon by the laborer and the employer of labor for better results following all fractures of bone. There is today a demand arising from the surgical profession itself that more accurate and scientific work be done in this field of surgery. There is thus a demand from without and a demand from within, both of which must and will be recognized.

What are the methods available for the treatment of fractures today? These methods are the non-operative and the operative.

By the non-operative treatment I understand the use of traction and counter-traction of all kinds, including Steinman's and Codivilla's nail extension, manual manipulation for reposition, massage, and fixation by splints and external apparatus. This treatment has its most faithful exponents in Professor Bardenhauer, Gräfsner

\* The Oration in Surgery delivered at the annual meeting of the Ohio State Medical Association, Cincinnati, May 6, 1915.

and Schrecker of Cologne, and by J. Lucas-Championnière of Paris, and by F. Steinman of Bern, Switzerland, and by Codivilla.

By the operative treatment I understand the direct reduction of the fracture and fixation of the bone with or without foreign material through an incision in the soft parts. This treatment has been perfected by Lambotte of Antwerp, Lane of London, by Huntington, Martin, Darraach and others in America.

Professor Bardenhauer contends that an exact anatomical result is not essential for a perfect functional result. He believes that traction and counter-traction are efficient means for securing perfect adjustment of fractured bones and always a sufficiently accurate adjustment to give a functionally useful limb. His results justify his contention. His methods should be more carefully and painstakingly employed in certain fractures. Few men in this country appreciate what can be accomplished by the non-operative method, for it has not been employed consistently and persistently in any large group of cases. Professor Bardenhauer almost never operates upon a fractured bone.

Mr. Lane, on the contrary, contends that an anatomically perfect setting of a fractured bone is necessary to a functionally useful limb. Mr. Lane makes it apparent that the way to secure an anatomically perfect bone after a fracture is by operation and direct fixation of the fragments by a steel plate and screws. Mr. Lane goes to the opposite extreme from Professor Bardenhauer, and operates upon practically every fracture.

I believe everything that is good and effective in both methods should be employed in the treatment of fractures. I believe that Mr. Lane has so popularized the operative treatment that its indiscriminate adoption has done enormous harm. I believe, on the other hand, that he deserves great credit for rousing the surgical world to the necessities and possibilities of the operative treatment and that he merits especial praise for his development of the technic of the operative method.

The pendulum has swung away from the traction treatment to the frequent employment of operation in fractures. Improper and unnecessary operations are being done by incompetent men. There is no more difficult operation in surgery today than a carefully conducted operation upon a fractured bone. The longer the operation is done after the fracture the harder the technical work will be. Operations upon fractured bone should only be done by surgeons of very considerable general surgical experience. The conditions under which they are done should be surgically ideal. The necessary and special instruments for precision and convenience should be at hand. If the conditions as indicated above are not present in a given case operation had best not be undertaken.

There is no time upon this occasion to enter into a discussion or description of the technical

details of the often difficult non-operative treatment, nor is there time to describe the details of the operative treatment. Each method is extremely difficult to master in its entirety. Each method is efficient under the same and diverse conditions.

This is the question that concerns us now and here: Which method, non-operative or operative, shall we employ in a given case of fracture? Where do we stand today with reference to the two extremes of treatment? In choosing between these two forms of treatment we must constantly keep in mind that the best methods of each are being compared. There are certain guiding principles which will help very much in coming to a decision.

1. The nearer to an anatomical reposition of the fragments of the fracture it is possible to come the greater will be the likelihood of securing a good functional result.
2. A primarily early operation is more desirable than a delayed operation. The results of secondary operations are unsatisfactory.
3. There is less likelihood of the non-operative treatment being successful as age advances.
4. In childhood the operative and non-operative treatment about equal each other in good results.
5. The mortality of the operative treatment is a negligible quantity.
6. Many undesirable terminal conditions will be avoided if the operative treatment is appropriately employed.

It is familiar to all of us that untreated or medically treated chronic ulcer of the stomach and duodenum may result in serious hemorrhage, in perforation of the viscus, in obstruction (pyloric), in hour-glass deformity and thus gastric obstruction, and in carcinoma. These four conditions associated with chronic ulcer are, as a rule, terminal conditions usually avoidable if surgical treatment is instituted at the proper time.

Likewise, I believe that the non-union of fractures, the malunion of fractures, infections with osteomyelitis associated with compound fractures, disabling and painful static conditions, stiff and painful joints near to fractures of the shafts of the long bones,—I believe that these are terminal conditions usually following inappropriate non-operative treatment. It is important that such terminal conditions should be avoided. I believe that the properly applied primary operative treatment will surely eliminate many of these disastrous terminal conditions.

7. The availability of either method will help to decide for or against it. If a man understands the technical details of the non-operative treatment and the operative treatment is not available, even though it be indicated, under these conditions very many fractures should be treated by the non-operative method. Good results will follow. If, on the contrary, the operative method is available and ideally possible, then the case being suited to operation, that method should be selected.

Keeping these seven general principles in the background we are confronted with a fracture. In order to decide upon a method of treatment

we must still have a knowledge of the following facts concerning the case in question:—

1. The age of the individual. Is he an infant, a child, a young adult, a middle-aged person or an old person?
  2. Is the fracture open or closed (that is, in old nomenclature), compound or simple?
  3. Is the fracture fresh, recent or old?
  4. Is the fracture complete or partial?
  5. Is the fracture transverse, oblique or comminuted?
  6. What is the exact situation of the fracture in the bone? What part of the shaft is involved? Is a joint involved?
  7. Are there present either local or general conditions apart from the fractured bone, which have a bearing upon the choice of treatment, such as—
    - (a) Injuries to other bones or to soft parts?
    - (b) Injuries to viscera?
    - (c) Is any pathology present in the body such as tuberculosis, syphilis, malignant disease, diabetes, arterio-sclerosis?
- Accurate information should be had upon all these matters before treatment is chosen for a given case, that is, if the treatment is to be chosen wisely.
8. Lastly, but a very vital fact, the results of the operative and non-operative treatment must be known in all types of fracture under similar local and general conditions.

The evidence from end results is being accumulated which eventually will make it pretty nearly always possible to decide what treatment any case should receive at the outset, that is, immediately upon receipt of the injury without any experimentation.

The results studied by the Committee of the British Medical Association, and the results now being studied by a Committee of the American Surgical Association, the results of smaller groups of cases from the experience of individual surgeons, all these returns form a basis for judgment as to the relative merits of the two great methods of treatment. As the returns of treatment are more accurately and painstakingly, that is scientifically, made, present standards of judgment will change. Fractures receiving one treatment today will be more efficiently treated by another method tomorrow perhaps.

It is a long cry from the non-operative treatment of Bardenhauer and his associates to the non-operative treatment commonly employed in this country today. It is, likewise, a long way from the operative treatment of a skilled surgeon working under ideal conditions and the operative treatment commonly followed.

The best operative treatment gives good results. The best non-operative treatment gives good results. We need both forms of treatment.

The treatment of each case of fracture is a separate problem to be solved upon its own merits and according to the plan above outlined.

To take a concrete instance, I find that personally I am today operating more frequently upon fractures of the shaft of the femur, than I did formerly. I am finding that fractures in the upper third in the middle and in the lower third of the shaft, particularly in an adult, and if the line of fracture is transverse or slightly oblique,

recover with better knee and ankle joints if the long traction, made necessary by the non-operative treatment, is avoided. The restoration of the femoral shaft to its normal alignment, and the securing of the too often forgotten normal anterior curve of the femur, place the individual upon a better basis and the functional return to normal is hastened thereby.

There are certain matters of importance which should be briefly mentioned in this connection. I am very greatly impressed by the lack of interest in fractures, and the general poor treatment which fractures receive in most hospitals in this country. I am also greatly impressed by the very great desirability of properly organized and conducted practical courses in fracture treatment for practitioners of surgery, where a man may become familiar with all sides and all phases of the best methods, both operative and non-operative. Undergraduate instruction in fracture treatment must always remain elementary.

I believe that the movement toward specialization in surgery is an inevitable and normal movement. Surgery today is too large a field for one individual to master successfully. The solution of the present inadequate handling of the fracture problem is in my opinion the gradual development in each community of men particularly fitted and interested in the treatment of fractures to whom a large part of such work will be willingly delegated. These men should be general surgeons.

I believe that the large hospitals of our various cities will in time have fracture wards with a continuous service, including an out-patient department, a visiting staff and house staff and nurses trained in the care of fractures. Such fracture clinics will afford ideal opportunities for instruction to undergraduates and practitioners and will also stimulate investigative work and research. Such a clinic will become a great laboratory for the study and advancement of the scientific treatment of fractures of bone.

### Symposium on Endocarditis.

#### ENDOCARDITIS IN CHILDREN: ITS PROPHYLAXIS AND TREATMENT IN AN OUT-PATIENT DEPARTMENT.\*

BY RICHARD S. EUSTIS, M.D., BOSTON.

[From the Children's Medical Department of the Massachusetts General Hospital.]

THE following paper is a preliminary report of a special heart clinic which has been conducted in the Children's Room at the Massachusetts

\* Read before the New England Pediatric Society, April 30, 1915.

NOTE.—SYMPOSIUM ON ENDOCARDITIS IN CHILDHOOD.—These investigations represent an attempt by the Staff of the Children's Medical Department of the Massachusetts General Hospital to de-



setts General Hospital in the attempt to solve two problems in the treatment of early or suspected endocarditis in children. The first question is whether the strict rest in bed for weeks or months, which is almost universally advised in these cases, can be carried out from an out-patient department, and we have decided that it is possible by the use of certain methods, which will be described later. The other question is whether this prolonged period of rest is worth while, whether it actually does prevent the development, or moderate the severity, of chronic heart disease in later life, and the answer to this only time will show.

We believe that endocarditis, chorea, rheumatic fever and tonsillitis are frequently not separate entities but merely different manifestations of the same infection; that the last three are serious chiefly because of their close association with the first; that endocarditis in its earliest stages is no more surely recognizable than is incipient phthisis with a negative sputum, but that if we delay treatment until there is a definite diagnosis of endocarditis we are wasting valuable time, just as does the physician who waits for the appearance of tubercle bacilli in the sputum before sending his patient to a sanatorium. That is, treatment, in order to be effective, must be begun before the diagnosis is made, and the results of treatment are to be looked for, not in the number of "cures," but in the number of cases that can be brought through a "rheumatic" attack (using the term in its broadest sense) without permanent cardiac involvement. Hence all cases of chorea and rheumatism and those cases of tonsillitis which show any evidence of cardiac abnormality should be treated as cases of acute endocarditis and kept in bed until several weeks after the temperature and pulse have reached normal.

With the aid and interest of a number of friends, we have been enabled to make a beginning of this method of treatment in the Children's Room at the Massachusetts General Hospital. For some years we have had a sum of money at our disposal for the purpose of preventing heart disease. At first this was expended in maintaining a small "heart hospital" of ten beds, where selected cases of early endocarditis could be given intensive treatment. This will be reported on in full by Dr. J. H. Young, who was in charge. It was not entirely

satisfactory in itself, and also because it could handle only a very small proportion of the cases. The rest we treated as out-patients and, in spite of our best efforts, child after child would break loose from parental control, or the parents themselves would decide that further care was not needed, so that our results were far from satisfactory. The energy of doctors and social workers was dissipated among these old, recurrent, and comparatively speaking, hopeless cases, while at the same time many new and curable ones were allowed to become chronic through want of attention.

Beginning March 1, 1914, a special heart clinic was instituted for the home care of cases of early endocarditis. All children with rheumatic fever and chorea are referred to it and also any cases of tonsillitis which show the slightest evidence of a "rheumatic history," or any cardiac abnormality. The doctor in charge devotes two mornings a week to this clinic, seeing about ten patients a morning and spending anywhere from 5 to 30 minutes on each one. The social worker is invariably present, in the same room with the doctor and patient, in order to give the doctor the benefit of her knowledge of the home conditions and also to hear what instructions are given to the patient. The rest of her time she spends in visiting the members of the clinic in their homes, helping and encouraging the parents to follow the directions, bringing toys and games for the children to play with or books for them to read, and making herself generally helpful. She also, although not a trained nurse, records the temperature and pulse rate at each home visit, and reports frequently to the doctor the condition of the children and obtains his advice without bringing them to the clinic too often.

After the medical history and physical examination of a new case are over, the doctor spends considerable time explaining the nature of the trouble to the mother, emphasizing the imperative necessity of immediate rest in bed and endeavoring to get her intelligent cooperation. Severe cases, and cases in which home conditions are very poor are given ward treatment at once; with the others a strong effort is made to carry out the treatment at home. Careful directions are given the mother and repeated until she understands them. If possible the social worker visits that very afternoon, or certainly the next day, and thereafter as often as the individual case seems to demand. In some cases she visits almost daily at first; in others once a week suffices, the important point being to keep the child in bed and quiet. With this close supervision it is possible to let the child go two or three weeks before asking for another out-patient visit. Any complications or unusual symptoms are reported to the doctor and he decides whether or not the child should be brought in at once for examination.

Subsequent visits to the hospital are made as often as each individual case requires. New

termine the best way to handle endocarditis in childhood. Our experience has shown that the treatment of endocarditis, when compensation is broken, is merely palliative. Further study leads us to believe that in a large number of instances heart disease in the adult originates in childhood. We, therefore, have put our energies into the treatment of endocarditis during the early stages. During the course of our studies many physical facts have been brought to light, one of which has already been reported by Dr. Gilbert (Boston Med. and Surg. Jour., clix, No. 3, p. 85). This first report is made not because it is complete but because we feel that a definite advance has been made in the early treatment of endocarditis in children. We feel that in such treatment lies the only hope of complete cure; and while we realize that we have been studying the problem for too short a time to make any authoritative statement, we feel that in many instances we have obtained permanent cures and that it is only with early treatment that one can expect lasting results.—FRANK H. TALBOT, M.D.

patients usually return in about two weeks, others once a month, and the convalescents only three or four times a year. Too frequent visits to the hospital defeat their own end by exciting and overtiring the patient; if they are allowed to wait too long between visits they are likely gradually to break free from restraint, to develop an unexpected endocarditis, or on the other hand even to overdo the bed treatment; each case must be handled as an individual and it is just here that the help of the social worker is invaluable.

After the chorea or rheumatism is over and the pulse and temperature have been normal for several weeks, we begin to allow them to get up. There have been a few children in whom a rapid pulse persisted without other signs of endocarditis, until in despair they were allowed out of bed. Then, rather to our surprise, the rate slowed down to normal; so this possibility, of too long a stay in bed, must be kept in mind.

The process of getting the children out of bed and back to a normal life is long and slow. We begin by allowing them to move into a chair for one-half to one hour a day and report in a week either personally or through a social worker. If all goes well and the pulse rate remains within reasonable limits, the time out of bed is extended hour by hour, with some children quite rapidly, with others very slowly and with great caution, until they are up all day except for an after-dinner nap. When they are first out of bed they are kept playing quietly in the house or on the piazza; then they are allowed on the street, at first only with an older person or at the time when the other children are at school and finally are sent back to school again themselves, beginning with only one session a day so that the afternoon nap may be continued. If they are then doing well all restraint is removed and they are encouraged to lead normal lives although the great majority are still kept under observation and required to report two or three times a year.

This is our ideal standard. In practice we do not expect the impossible. Nevertheless, considering the average type of parent with whom we are dealing, our advice is surprisingly well followed. The fact that the doctor is willing to spend 10 or 20, occasionally even 30, minutes in talking with them, and the frequent friendly visits of the social worker, make an impression that was wholly lacking under the old regime with its hurried, impersonal, and half understood directions. The following figures illustrate the results we have obtained.

**Bed Care.** Thirty-four cases entering after March 1 were sick enough to require full time rest in bed. Seven of these were discharged from the clinic for various reasons before the completion of the treatment and five more are still in bed, which leaves 22 cases whose completed rest in bed averaged  $7\frac{1}{2}$  weeks apiece.

**Under Restraint.** By this term is meant that the children were kept out of school or were sent

only for a half day, were not allowed to play hard, and were made to lie down for two hours a day. Fifty-three cases come under this heading, the other 7 being kept under observation, but not under restraint. Excluding 1 case that died of malignant endocarditis and 9 that were discharged before treatment was finished, we have 43 cases. Of these, 10 cases under restraint on March 1 have been kept under restraint since then for periods of from two to nine months—an average of four months. Eighteen cases still under restraint Dec. 1 have been kept under restraint for periods of from one-half to nine months, an average of three months. Fifteen cases begun and concluded between March 1 and Dec. 1, these, of course, being the lightest ones, were kept under restraint for periods of from one-half to seven months—an average of three and one-half months.

One feature of the heart clinic that must be emphasized is its necessarily close connection with other institutions and organizations dealing with such children. Reference has been made already to the ward care of severe cases at the Massachusetts General Hospital. Before they are discharged, our social worker has made everything ready for them at home and explained that their return from the hospital does not mean that they are well, but merely that they are better, and that it is still necessary to stay in bed until the doctor in the Out-Patient Department gives permission to get up. In this way we feel that their hospital stay can be somewhat shortened and yet relapses prevented.

Other children are taken care of at the Brookline Heart Hospital, and then returned again to us.

Others again, in the summer, go to Children's Island at Marblehead, where special arrangements have been made to give them bed care.

However, we feel that, except for acutely sick children, an institution is not the ideal spot. It is a question not only of relieving the immediate symptoms, but of preventing relapses. A child discharged practically well from an institution goes back to the same environment in which it became sick, and with the child appearing perfectly well it is almost impossible to persuade the parents to make any changes. However, if the child has been at home from the first, there is more chance of the necessary improvements being made. The choreic girl, for instance, will be given a bed of her own, instead of sleeping with several sisters, and the custom once started is more likely to persist. Having been in bed at home for a month or so she is more willing to keep on taking a nap and going to bed early, and there is not the sudden and exciting total change of environment that so frequently upsets a choreic child on returning home from a hospital. Similar arguments apply to cases of early chronic endocarditis, and even to children who have had rheumatism without cardiac involvement.

Hence, when for one reason or another, home

treatment was unsuccessful, we adopted the expedient of boarding the sick children out in other families. We started with one or two rather exceptional cases and have found them to do so well that we are sending others. There is one girl in particular who has been in the ward several times with chorea and has always relapsed on returning home, who is now doing well boarded out and will probably soon be able to go back to school.

So far we have worked with four different organizations, The Children's Aid Society, The Children's Mission, The Children's Friend Society and The Society for the Care of Girls, each of which has taken one or more of our patients and assumed responsibility for them while they are away from home; and without their assistance we should be totally unable to carry out a method which is proving of the greatest value.

At the time the figures were collected for this paper the heart clinic had been in operation just nine months—from March 1 to December 1, 1914,—and hence this is merely a preliminary report.

A total of 60 cases have been treated; 20 of these were old cases that still needed supervision, and were taken on in a body on March 1. Twenty-three cases have been discharged during the nine months, leaving 37 cases still under supervision.

**Etiology.** Thirty-two of the 60 cases, or 53.3%, were choreic at the time of admission, and 10 more gave a history of choreic attacks in the past, making a total of 42 cases, or 70%, in which chorea played a part. Nine cases, 15%, were rheumatic on admission and 19 more gave a history of joint or muscle involvement in the past that was interpreted as of rheumatic origin, making a total of 28 cases, 46.6%, which were classed as rheumatic. Thirteen cases, or 21.6%, gave a history of both rheumatism and chorea, and in two of these both diseases were active at the same time while the patient was under our observation. In only one patient was there no evidence of either rheumatism or of chorea, he being a boy who was under observation for a suspected endocarditis following tonsillectomy.

We have endeavored to classify the cases according to the condition of the heart at the time of admission and again at discharge, but have found it exceedingly difficult because of the nature of the disease. It is fairly easy to say in a given case, where the heart shows no enlargement, no increase in rate or change in rhythm beyond a simple sinus arrhythmia, where the sounds are of good quality and there is no murmur, that that patient has no endocarditis. The other extreme is also comparatively simple, but how are we to classify the intermediate stages? It is virtually impossible by any of our present means. Hence, for the purposes of this paper only, we have made a large group with the heading "heart suspicious" and included in it those cases which showed some but not all the signs of acute endocarditis. The following figures there-

fore, while suggestive, are not to be relied on absolutely, and for the ultimate test of whether our efforts are worth while we must wait several years to compare the incidence of chronic endocarditis in our clinic with similar cases, which have not had the same intensive treatment.

Nineteen cases had normal hearts when first seen. Sixteen of these are still normal; 2 are classed as "suspicious" and are still under treatment; 1 has a definite endocarditis and is still under treatment.

Twenty-five were called "suspicious" on admission; 17 are now normal; 6 "suspicious"; and 2 have a definite though slight chronic endocarditis.

Adding these two groups together, i.e. all that did not have a definite endocarditis when they were first seen, we have 44 cases, only 3 of which (6.8%) have developed a definite endocarditis while under our care. Eight more (18%) are classed as "suspicious."

We now come to the 16 cases which did have a definite endocarditis when they were first seen. Eleven of these were chronic from the first or had a slight acute endocarditis on an old chronic lesion; none of these have grown worse while under observation. The 5 remaining cases were acute from the start; one was the malignant type, developed a progressive carditis, and died; another, in spite of good home care and strict rest in bed, ran a persistent high pulse with occasional fever, and now has a severe chronic mitral regurgitation; two give evidence of slight perfectly compensated mitral regurgitation; and one, which in the ward was thought to have adhesive pericarditis now shows no evidence of abnormality by physical examination or by electrocardiogram.

To sum up: we have treated 60 cases of chorea, rheumatism or early endocarditis for varying lengths of time from ten days to nine months. Eleven had chronic endocarditis when first seen and were carried through their chorea or rheumatism without further cardiac involvement. For the purpose of the following table, i.e. the determination of the incidence of fresh endocarditis while under efficient treatment, these cases can justifiably be classed as "normal hearts."

1 has died of malignant endocarditis	3.33%	24.00%
1 is a hopeless cardiac cripple	8.33%	
5 developed chronic endocarditis but are well compensated	8.33%	
8 have "suspicious" endocarditis	13.33%	
34 have normal hearts	56.66%	74.00%
11 have chronic endocarditis antedating their admission to heart clinic	18.33%	

Thus 75% came through their attack without acute endocarditis, 13% more are still in the suspicious class, and only 12% have received permanent cardiac damage. However it must be remembered that these are merely provisional figures obtained from a nine months' study, that they deal usually with but a single attack, and

that some of the cases that we now consider to have normal hearts may later show cicatricial changes that have escaped observation.

**Relapses.** A total of 9 patients came down with a relapse while under treatment and in only 2 of these can it truthfully be said that they were not following our directions. The other 7 were following the instructions fairly well and had evidently been allowed to go ahead too fast. Two of the relapses were distinctly initiated by tonsillectomy, one a chorea, the other an arthritis. We also have records of another case before this clinic was started, where a severe relapse of chorea followed immediately after the extraction of several teeth. On the other hand, tonsils were removed in three other cases with beneficial results. Our present opinion is that tonsils and adenoids should be removed and teeth treated by a dentist in all cases of "rheumatic infection" which give a history of repeated sore throats, or head colds, or of toothaches, or in which anything abnormal can be discovered on examination; but that treatment should preferably be postponed until the child is over his chorea or rheumatism. If, however, the disease is at a standstill or growing worse in spite of good treatment, we advise immediate interference. The wholesale removal of tonsils and adenoids in the course of or immediately following chorea or rheumatism we regard as unnecessary or even dangerous.

The following figures may be of interest as showing the relatively small number of children which had to be sent to an institution.

**Ward Care.** Twelve cases were admitted to our wards for periods of two weeks to four months.

**Brookline Heart Hospital.** Three cases were sent to this special home; 1 was discharged in two weeks because of vaginitis; the other 2 are still there after two and three months respectively.

**Children's Island.** Two cases were sent to Marblehead; 1 returned after one month with a severe relapse and was admitted to our ward; the other stayed three months and was greatly benefited.

**Home Care.** One patient is in the hospital. The others have all been taken care of at home for periods varying between ten days and nine months, and 48 of the 60 children have been treated at home from beginning to end.

**Boarding Out.** Up to December 1 only 3 patients had been boarded out, for periods of two and one-half to five months. They have done very well, and we feel that it is a method to be used more and more in persistent choreas of moderate or slight severity, where the home surroundings are a factor in keeping up the disease. However, it is not to be used as a temporary measure, but only on the distinct understanding that the child is to stay away for several months after he is well; otherwise he is only too apt to relapse. Also it is necessary that the

boarding home be a good one with few or no children, and that the woman be intelligent and under close supervision.

In conclusion we consider that we have shown that it is possible by means of a special clinic and a full time social worker to give efficient treatment for early or threatened endocarditis to patients of the out-patient class. According to the estimates in the literature the incidence of endocarditis in the "rheumatic infections" varies from 40%-80%; in our series so far it is certainly not over 25%, and perhaps less. Whether these results are permanent or not it is impossible to say at present, although we hope to supplement this preliminary report a few years hence with an account of the end results of these cases.

## SOCIAL PROBLEMS INVOLVED IN THE TREATMENT OF CHILDREN WITH HEART DISEASE, FROM THE POINT OF VIEW OF AN OUT-PATIENT DEPARTMENT.

BY CLARA M. WELSH, BOSTON.

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THERE has always been an attitude of pessimism among physicians with regard to the prognosis of heart disease in children dependent upon dispensaries and hospital clinics for their medical treatment. This has not been wholly because of the nature of the disease, for a great many people lead practically normal lives though suffering from a heart lesion. Neither is it because the children receive inferior medical treatment in dispensaries and out-patient clinics, for the physicians of the poor are the physicians of the rich in a great many instances, and the child who attends a hospital clinic is treated by the same physician as his up-town brother.

Having made a survey of the types of cases treated in the Children's Clinic for three months, and having found that the third largest group treated in the clinic was suffering from some form of a rheumatic infection, or its results, Dr. Talbot attempted to analyze this attitude of pessimism amongst physicians and arrived at the following conclusions. Heart disease is a social disease, and needs social treatment. The child and his family must be educated, his environment must be altered, and adapted to his limitations. He must be kept under supervision for a long period of time, not merely until he has recovered from the acute symptoms which bother him, and which have made his family recognize the immediate necessity of a physician's care.



And so, in January, 1911, a social worker was employed to help in the treatment of this large and interesting group of children. Her problem has been to make a social investigation of all children falling within the rheumatic group, i.e. endocarditis (chronic and acute) chorea, and rheumatic fever; to bring to the physicians the information obtained from this investigation, which had bearing upon the child's treatment; to form, with him, a plan for treatment suited to the individual case; to see that the child's parents were instructed and educated regarding his condition; to help adapt his environment to his needs, in so far as possible; and to see that his connection with the hospital was not lost, but that he reported for observation as often as necessary.

The observations recorded in this paper cover the experience of these four years, in working with 264 children. Some have been under supervision during the whole time, and the group has been constantly added to; 8 have died; 2 have been placed in homes for incurables; 23 are having bed care; 32 are still under restraint; 120 are leading practically normal lives, happier and healthier for the knowledge of how to live in spite of their handicap, and how to prevent it from becoming more serious; 10 have been graduated to the adult medical clinics; 69 have become inactive.\*

It has been the custom in the Children's Clinic for the physicians to automatically refer all cases of heart disease to the social worker. If the patient is to go to the wards for treatment she makes her investigation while he is there, and has a plan for convalescence ready on his discharge. If he is to be treated in the outpatient department only, he is given an appointment to return. Before it is time for him to return the social worker has made the investigation which is of benefit in making further plans for the patient's treatment.

It is absolutely essential for the social worker to have as much medical knowledge about the child's condition as the physician can give her. It is not sufficient for her to know that the child has a "damaged heart." She must know something of the degree of damage, how much the function is impaired, if possible, whether any acute process is going on, and the exact amount of rest and exercise which the physician prescribes. The whole future of the child may depend upon the exactness of her knowledge, and the accuracy and vividness with which she interprets it to the child's family. It is her responsibility to arrange for these directions to be carried out so far as possible, and her report of the child's behavior between visits serves as a partial basis for further treatment and instructions.

From the point of view of treatment, social as well as medical, heart cases divide themselves into two groups, acute and chronic. A great

many of the cases in the acute group in time pass into the chronic group. Our method of treatment of acute cases, absolute rest in bed for a long period of time, involves many social problems. Few hospitals for treating acute illness can keep patients suffering from acute endocarditis for as long a time as bed care is required. Obviously, some provision must be made for these children, outside the hospital, if treatment is to be lasting and effective.

Since the beginning of our work we have cared for many of these children in their homes. At first, owing to bad home conditions, or the children being unruly, we felt the need of a convalescent hospital where patients could receive bed care for as long a time as necessary. Such a hospital was opened in December, 1911, and continued until March, 1914. During that time we cared for 54 children at an expense of \$2,696.81. The parents of these children paid what they could, and the balance was raised from private funds. Our accounts show that about half of the total amount had to be raised from others than parents.

The group of children cared for at this convalescent hospital makes an interesting study from a medical point of view. There are also some interesting social facts gathered from a study of the individual cases. All of the patients, with a very few exceptions, went from the Massachusetts General Hospital, and were sent, because, in the opinion of the physician and social worker, they could not be cared for at home under existing conditions. The social worker kept in touch with the progress of the children while they were there. They were not discharged without her knowledge and approval, and were under her supervision when returned to their homes.

Some of the social worker's most difficult problems have come at this point. The child has forgotten how to adjust itself to family life, for a long period spent in an institution, however home-like, sometimes destroys relationships which may have to be painfully rebuilt. It seems practically impossible for a mother or father of somewhat limited experience and knowledge, to understand that this child, who is returned to them apparently looking and feeling so well, must do and refrain from doing, certain things, in order to continue looking and feeling well. The parents have not experienced the long, tedious period of bringing their child back to health. The child himself forgets quickly, and the process of educating parents and adjusting child to environment must begin anew.

Probably a greater improvement is made in a short time by this method where the conditions can be absolutely controlled, than when an effort is made to educate parents to care for a child at home. But what happens in the long run? Often it is necessary to sacrifice the child and allow the unbelieving parents to go their own way, learning by experience when the child has a relapse, before the process of education can

\* Referred to other hospitals, discharged because of lack of co-operation. Moved from town, or lost track of.

really begin to take root. This method surely involves much waste. The expense is great, and little can be accomplished.

After two years of experiment with convalescent hospital care, we began to see that the few children whom we had been able to care for adequately at home, did better in the long run than those who were sent to the convalescent hospital. There were fewer relapses, the treatment had more continuity when relapses came and the parents were prepared to meet and care for these as they occurred.

The number of cases under intensive supervision had to be limited because of pressure of work on the part of the social worker. We found that at the same expense required to care for ten children in the convalescent home, we could employ a visitor who could supervise from 30 to 40 children in their own homes, visiting as frequently as required, and making the necessary social adjustments in the family. In April, 1913, a committee had been formed to raise money for helping to care for children at the convalescent home. This committee generously offered to use their funds to pay a visitor's salary, and to continue as an advisory body to whom she should report progress with the children under her supervision. The results of nine months of this work are reported on elsewhere by Dr. Richard Eustis.

This visitor has under her supervision only children with acute heart disease, or those in danger of developing it through chorea or rheumatism. If the home is unfit, it is her business to find out the causes of this unfitness, and if possible, to remedy them. Poverty alone is no reason for removing a child from its parents. It is better to aid the family to keep the child, than to aid them by removing him.

The process of educating more or less ignorant parents, and a young, heedless child, is a slow, patience-demanding one. But much can be done by frequent visiting, explaining and persuading, on the part of a hopeful, persistent and resourceful person. She must understand children and must have at her disposal all kinds of ways and means for keeping the child happy and contented in bed. She must be able to teach the parents how to keep him comfortable there, and to realize the importance of following the doctor's instructions to the letter. The economic advice of, "Follow the doctor's instructions, and have the child improve rapidly. Don't follow them, and have a sick child for a long time," usually appeals to parents.

There are certain medical facts which the visitor must know, certain symptoms which she must be able to recognize and report to the physician. But her function is that of a visiting teacher, rather than that of a visiting nurse. She must have a knowledge of the resources of the community, charitable, social and educational, in order that the needs of her families may be recognized and met.

I know of only five reasons which make it justifiable and necessary to care for a child with heart disease outside of his home. First, when there is present a condition needing constant medical and nursing care. The solution here is, of course, hospital care. Second, when other illness in the family, usually that of the mother, makes home care impracticable. Third, when there is a large family of young children in a small home, so that anything like rest and quiet is impossible to attain. Fourth, when there is persisting ignorance and lack of coöperation on the part of parents. Fifth, actual criminal neglect on the part of parents who are able to bear the burden.

The remedy for most of the cases falling within groups two, three and four, is suggested by coöperation with our child-placing agencies. If a child must be cared for outside of his home, the next best arrangement is a foster home, wisely chosen as to the needs of the individual child and carefully supervised. As this means of disposal necessitates an outlay of considerable effort and money, the prognoses of the various cases must be carefully considered, and regarded as investments. Are we reasonably sure of getting lasting results? Is the child teachable? Can the home situation be bettered so that all the good work may not be lost when the patient returns home? A good many cases under the fourth heading fail to measure up to these standards, because of poor stock, incapable of being taught or helped. There is really little hope of doing any lasting good for these—they are social incurables. A child-placing agency is quite justified in refusing to accept the burden of a child whose heart is hopelessly crippled, or whose family is socially incurable. If, for humane reasons, action must be taken and the family are willing to give the child up, guardianship should be obtained for a number of years, and the burden should be one for public rather than for private support.

Group five has caused us some of our hardest struggles, and some of our most bitter disappointments. It seems nothing short of criminal that neglect on the part of the parents may spoil a child's every chance for efficient manhood or womanhood. Yet this happens in a good many cases and we are usually powerless to prevent it.

A young Syrian boy of ten years came into our care in 1912. His father, a man of intelligence and thrift, had died a year before. His mother was ignorant, shiftless and powerless to control her five children, who were rapidly becoming delinquent. A pension from the city and state enabled her to keep her home within the congested part of the city, from which she refused to move.

The boy, a bright, promising and responsive little fellow, recovered from his attack of acute rheumatic fever and acute endocarditis but was left a mitral lesion. After six months of care and study at the convalescent home it was thought economic and advisable to place him in a foster home until he should become trained in how to care for himself, and until his heart could get back as much of its original

efficiency as possible. By the fall of 1914 he had improved remarkably in every way and with the exception of violent exercise he was allowed practically all the activities of a normal boy. His foster parents and teachers spoke highly of his promising ability. However, his approaching earning capacity appealed to his mother. In spite of all the persuasion that could be brought to bear and notwithstanding repeated assurances on our part that the child had been made and kept well only by the most careful attention to his hygiene and exercise, she took him to her crowded and unsanitary home.

In four weeks he suffered an attack of rheumatic fever with new endocarditis. His mother took him to a physician who, having seen him once in his office, said he would do well at home but must be flat on his back for six months! The physician later told the social worker, who inquired concerning the boy, that in his opinion the heart was hopelessly crippled; that he would never amount to anything and that the mother's rights should be respected!

Which medical opinion should have more weight? That of the doctor who had watched the boy carefully for two years and knew the capacity of his heart, or that of the doctor who had seen him only once? And which plan respected the mother's "rights" more, the one which was made to watch her boy and help him to grow to self-supporting manhood, or the one which allowed her in her foolish ignorance to spoil the boy's future usefulness?

The Massachusetts law regarding the physical neglect of children is useless in such cases. The term "neglect" may be interpreted to mean neglected medical treatment, which in turn may be interpreted broadly. But the court is powerless to act against parents who refuse medical treatment for their children, if any physician will appear in court and testify that the treatment is not necessary.

The lesson to be drawn from this and similar cases is, that it is much safer to procure guardianship at the outset of such cases as need a long period of treatment away from home on account of neglect.

In considering children with cardiac disease, the school problem is a great one. There is so much loss of time that they fall behind children of their age and are seriously handicapped. A comprehensive scheme provides for teaching these children in their homes and for close co-operation with teachers and school nurses as soon as they are able to return to school. Teachers are often glad to advise the visitor about home lessons. The problem would be much simpler if more of the schools had elevators. Still some plan can usually be made with the help of interested and resourceful teachers. When there is no class of the required grade on the first floor, it is sometimes possible to transfer a child to another building, where a longer walk but no stair climbing may be involved.

In Boston there are ungraded classes which are small and which provide more individual teaching than is possible in grades of usual size. Such a class on the ground floor is a splendid

place for a child who has lost a great deal of time because of heart disease. Children may attend for a half day only, when just returning to school after illness; they may be excused from exercises; they may have special supervision at recess and they may pass in and out of school before or after the files.

Instruction and amusements for the child who is acutely ill, must be of the simplest kind and must be carefully supervised, to prevent them from making the patient tired or nervous. As much harm can be done, however, by taking all occupation away from a child as by allowing him to overdo. Oftentimes simple hand work is of great benefit to choreic patients. I have seen children with obstinate cases of chorea, particularly of the hands, improve and recover when knitting was given them. Scrapbook making, simple weaving, knitting and bead work, modeling with plasticine, painting and coloring of pictures, cutting out of paper dolls and doll house furniture are all easily done in bed. An attempt should be made to provide work which has a purpose, as it interests the patient longer than a mere toy. The game "Meccano" is very popular with older children, also we always have a lending library on hand for their use.

The child and his parents should early be taught the possibility of permanent handicap and should be made to feel that the very best possible education is going to be of untold advantage to him. Unskilled work usually involves physical strain, and is consequently a great danger, which should not be risked. Every child suffering with heart trouble should be given the benefit of vocational training.

It is our policy to "graduate" children at 13 or 14 years of age to the adult medical clinics, where they are supervised medically by a special physician and socially by the social worker in that clinic. This social worker helps to make it possible for the child to attend high school or a trade school and sees that he learns some occupation which he can safely undertake.

With such a program extensively carried out we should have fewer misfits in industry and fewer cardiac patients in our wards who do not know how to support themselves except by unskilled manual labor.

I do not think that the logical development of care for children with heart disease is along institutional lines. An institution where these children can be cared for and taught does not seem practical or necessary. Those who need institutional care for a long period of time, namely, those whose hearts have received such damage as to make them permanent invalids, are comparatively few in number. There is little to be done for them except to keep them as happy and contented as possible during their lifetime, and for them there should be provision in homes for incurables.

Emphasis should be placed where preventive work is possible, namely, on the physically and socially hopeful cases. These far outnumber

those who are unhelpable. A long time spent in an institution does not teach children with heart disease how to adapt themselves and their limitations to normal family or community life. They become a class apart like the blind and deaf. Constant association with others disabled like themselves tends to make them neurasthenic. This tendency has always to be constantly guarded against when working with children where so much emphasis must be placed on their physical disability along certain lines.

In closing I should like to suggest the outline of a program for the efficient care of children with heart disease.

1. Adequate medical treatment.
  - a. Ward treatment when necessary.
  - b. Out-patient treatment, patients to be seen always by the same physician.
2. Adequate social treatment based upon medical treatment and following along closely with it. This should include:
  - a. Consideration of the home environment, both physical and mental.
  - b. Consideration of the school environment both physical and mental.
  - c. Consideration of suitable recreation and occupation.
3. Supervision over a long period of time.
4. Vocational guidance and training.

#### TONSILLECTOMY AS A THERAPEUTIC MEASURE IN THE TREATMENT OF CHOREA AND ENDOCARDITIS.

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[From the Children's Medical Department, Massachusetts General Hospital.]

SINCE July, 1911, an intensive study of endocarditis in children has been carried on in the Children's Medical Department of the Massachusetts General Hospital. These patients have been under observation by the same physicians for varying lengths of time, thus allowing each physician to follow out consistently different methods of treatment. The social condition of each patient has been investigated and followed by a special worker in the social service department, whose intimate knowledge of the patient and his home conditions has been of inestimable value to the physician in prescribing and carrying out treatment.

Before the work had gone on many months it became apparent that a place must be provided for patients not sick enough to occupy a bed in a general hospital but still too sick to receive adequate treatment at home. For this purpose a

Convalescent Home of 10 beds was established, where these children could have absolute rest in bed for weeks or months, and where, when able to be up, their activities could be carefully regulated and controlled. The Convalescent Home was in operation from December, 1911, to March, 1914, and in that time 54 patients between the ages of 5 and 12 years were treated, with an average of 107 days per patient. These patients were referred from both the out-patient department and wards. All patients had an acute or chronic endocarditis or were cases of chorea, arthritis or tonsillitis in which endocarditis was suspected. Of the 54 cases, 21 had a tonsillectomy performed either before they first came under observation, or while under observation, and it is with the end results in these cases that this paper deals. These patients, with few exceptions, have reported regularly to the out-patient department since their discharge from the convalescent home.

In all but three of the 21 cases, tonsillectomy was done in the out-patient department of the Massachusetts General Hospital. In two cases, operated upon outside the hospital, the condition of the tonsils before operation is not known; in the other case the tonsils were described as "considerably enlarged." In 11 cases the tonsils were described as "large," "enlarged," "very prominent" or "prominent and ragged." In 4 cases as "slightly+," "moderate," "slightly enlarged and inflamed" or "moderately enlarged." In one "buried," in one "not visible" and in one "small."

Of the 21 cases 6 gave a history of previous tonsillitis. Five patients gave a history of previous arthritis; since tonsillectomy 3 patients have been free from arthritis, while 2 patients have had subsequent attacks, one 2 months, the other 27 months, after operation.

A history of chorea previous to operation was given in 9 cases. After the removal of the tonsils 8 of these cases had from one to four attacks of chorea. There were 4 patients who have had from one to four attacks of chorea since the removal of the tonsils with no history of previous attacks. The one patient who has been free from chorea since the removal of the tonsils is a boy, aged, when first seen in March, 1913, seven years. At this time he had chorea with a heart of normal size, but with a loud functional murmur. He was in the ward one week and home in bed 11 weeks. From June 6, 1913, to October 16, 1913, he was in the convalescent home, and while there showed no sign of chorea. Examination of the heart on discharge showed the apex beat in the fourth space in the nipple line, the left border of dullness corresponding, 6.5 cm. to the left of the median line. Right border 2.5 cm. to the right of the median line. There was a rough systolic murmur at the pulmonic area, diminishing in intensity toward the apex but audible there, not heard in the axilla. On December 31, 1913, the tonsils and adenoids were removed, at which time there was slight chorea.



On April 25, 1914, a faint apical systolic murmur was heard for the first time. On November 21, 1914, the record states there is "probably a very slight mitral leak," with no demonstrable hypertrophy. Up to the present time the boy has had no more chorea, is under no restraint and is free from symptoms.

Of the 21 cases, 12 cases were known to have a definite endocarditis before tonsillectomy. One patient had an acute arthritis with a questionable endocarditis when first seen, no history of chorea or tonsillitis. Six weeks before operation the heart was recorded as normal and has remained so. There have been no subsequent attacks of arthritis nor chorea. Of the remaining 8 cases it is impossible to positively prove the absence of endocarditis before operation, since it was not at that time, as now, the routine to examine, in the Children's Department, the heart and lungs of each patient the morning of operation.

At the present time 17 cases show a chronic endocarditis, and of these 12 were known to have had endocarditis before operation. Three patients have had a fresh endocarditis or an acute exacerbation of a chronic endocarditis since operation, and in two patients the diagnosis is probable but not certain. Of these five cases, endocarditis was definitely known to be present before operation in two. One known and one suspected case of acute endocarditis now have normal hearts. Since operation one patient has been discharged from the ward with the diagnosis of subacute endocarditis.

It has generally been assumed that tonsillec-

tomy, even if it offered no benefit, could do no harm, excepting the immediate danger of the operation. This statement is questioned by two cases in this series. One patient had chorea 12 months before operation, with no history of arthritis, tonsillitis or endocarditis. Two weeks after the operation she had her second attack of chorea, complicated by an endocarditis, probably acute. The other case gave no history of chorea, arthritis or tonsillitis before operation. The heart was examined three weeks before operation and found normal. Five days after operation the patient had chorea and an acute endocarditis.

The present condition of 3 patients is unknown. Of the remaining 18 patients, 12 are well, 2 have no endocarditis, 10 still have an endocardial murmur, and, with one exception, show slight cardiac hypertrophy. These patients are well in so far as they have no symptoms and enjoy all the normal activities of childhood without restraint. The physical activities of 4 patients are still more or less restrained. One patient is now having her third attack of chorea. Another patient, when last seen in November, 1914, was having her fourth attack of chorea and up to this time has had no endocarditis.

Definite conclusions cannot be drawn from so few cases. The occurrence of chorea after tonsillectomy in 12 out of 21 cases strongly suggests, however, that removal of the tonsils does not offer the protection against chorea, and the always present possibility of endocarditis, that many have heretofore believed.

## BEFORE TONSILS WERE REMOVED.

	CONDITION OF TONSILS.			
	Chorea.	Arthritis.	Tonsillitis.	Endocarditis.
1.	0	0	0	?
2.	0	0	0	+
3.	+	0	+	+
4.	0	0	0	?
5.	0	0	0	?
6.	0	0	0	+
7.	+	0	+	+
8.	+	0	0	+
9.	0	0	0	?
10.	0	0	+	+
11.	+	0	0	?
12.	0	+	+	+
13.	+	0	0	+
14.	0	0	0	?
15.	+	0	0	?
16.	0	+	0	?
17.	0	+	+	+
18.	+	0	0	+
19.	+	0	0	?
20.	0	+	0	+
21.	+	+	+	+

## AFTER TONSILS WERE REMOVED.

	ENDOCARDITIS.				
	Chorea.	Arthritis.	Acute.	Subacute.	Chronic.
	0	0	0	+	+
1 attack	0	0	0	0	+
2 attacks	0	0	0	0	+
0	0	0	0	0	+
2 attacks	0	+	0	0	0
2 attacks	0	?	0	0	+
1 attack	0	0	0	0	+
3 attacks	0	0	0	0	+
0	0	+	0	0	+
0	0	0	0	0	+
3 attacks	0	0	0	0	?
0	0	0	0	0	+
1 attack	0	0	0	0	+
4 attacks	0	0	0	0	+
0	0	0	0	0	+
0	0	+	+	0	0
0	0	+	0	0	0
1 attack	0	0	0	0	+
4 attacks	0	?	0	0	+
0	0	0	0	0	+
3 attacks	+	0	0	0	+

12 cases had chorea after removal of tonsils.

9 " " " before removal of tonsils.

8 " " " both before and after removal of tonsils.

4 " " " after but not before removal of tonsils.

1 " " " before but not after removal of tonsils.

## Medical Progress.

### REPORT ON DERMATOLOGY.

By JOHN T. BOWEN, M.D., BOSTON.

#### FATAL POISONING FROM RESORCIN APPLICATIONS.

Few cases of severe constitutional poisoning from the outward application of resorcin are on record. In one of the reported cases the patient was a man of 29, who had been treated with a 50% resorcin paste for a very extensive lupus vulgaris; another, a boy of 19, had rubbed in a 15% resorcin ointment over a large surface of the skin.

Boeck's case was that of a poorly nourished boy of 16, who had been affected by a very extensive lupus vulgaris from his third year. The whole of the left lower extremity, and the greater part of the left upper extremity was covered with numerous closely aggregated lupus nodules. He was treated at first by the Finsen light, with experimental applications of a 27% resorcin paste on the left arm, which caused a certain amount of pain and discomfort. Later a 25% resorcin paste was applied to the greater part of the left calf, where the skin was covered with intact epithelium. The application was made at about 10.30. He began to be restless half an hour after the application had been made, and to complain of severe pain, but gradually became quiet. He was found, 1½ hours after the application, unconscious, cyanotic, with spasmodic twitching of the right arm, pulse 120, temperature 37.8°. Shortly afterward he developed convulsive movements of the face, right arm and leg, and later the left side of the body. The pulse became 150, the respiration frequent, ceasing at times for a minute. The pupils were at first much dilated, later contracted. The convulsive attack lasted the whole afternoon, ceasing towards night, and was followed by death in the early evening. At the autopsy the chief finding was a very pronounced edema of the brain. There was a widespread glandular tuberculosis, and tubercular foci in the apices of both lungs.

There could be no question that death was caused by poisoning from resorcin. The symptoms of such poisoning are very characteristic, consisting of quickly appearing restlessness and wandering, followed by cyanosis, coma, and severe convulsions. Ordinarily the patient recovers quickly, awaking almost perfectly well.

The result in this case was most unexpected, as Boeck had used resorcin in cases of lupus during a good many years in even higher percentages than in the present case. In this case, to be sure, somewhat larger surfaces than usual were treated, but these surfaces were everywhere covered with a thick, intact, horny layer, which therefore was not able to prevent the poisoning. This fact was recorded also by Andeer, who found by his experiments that, although resorcin

intoxication did not occur in the presence of a completely sound skin, an intact epidermis afforded no security against poisoning in the presence of an underlying morbidly affected corium. Resorcin is a dioxymethyl, and in any case the substances that are formed by its contact with the skin must be of very transient nature, as symptoms of poisoning may occur a quarter of an hour after its application.

On account of this case Boeck advises that in the future resorcin be not employed in large doses over considerable surfaces. In the treatment of lupus vulgaris he considers that we have even better and more effective chemical agents in pyrogallol and salicylic acid. He had previously employed resorcin in such cases for the reason that he considered it the mildest application. He considers resorcin more effective against lupus of the mucous membranes, when not extensive, than any other chemical or physical agent. In lupus of the nasal cavity he uses a resorcin paste, made up of equal parts of resorcin, talcum and vaseline, applied twice daily for a week.

#### TUBERCULOSIS TYPES.

Lipschütz, in a study of the recognition and significance of the several types of tubercle bacilli in the clinically different forms of cutaneous tuberculosis, comes to the following conclusions:—

1. The different varieties of tubercle bacilli,—human, bovine, and gallinaceous, occur in man as the cause of the different varieties of tuberculosis of the skin.

2. Mutual infection between men and animals is possible; hence prophylaxis should deal with fighting not only human, but bovine and gallinaceous tuberculosis.

3. In by far the greater number of all hitherto studied cases of cutaneous tuberculosis, the human type has been recognized as the cause.

4. The bovine type occurs regularly in tuberculosis verrucosa cutis (Riehl-Paltauf), which is therefore to be defined as a true inoculation-tuberculosis with bovine bacilli. This inoculation infection remains almost always localized; it progresses in very exceptional cases to glandular swellings and lymphangitis.

5. While verruca necrogenica ("anatomical wart") is probably, contrary to tuberculosis verrucosa, an inoculation-tuberculosis with human bacilli, lupus vulgaris must be regarded as caused both by the human and bovine type, much more frequently by the former. Contrary to the belief of older writers, lupus vulgaris is a bovine skin tuberculosis in only a small percentage of all cases.

6. The significance of the gallinaceous type in the genesis of rare forms of cutaneous tuberculosis is not to be underestimated. In case of failure of experimental inoculations in guinea pigs, the diagnosis of tuberculosis should not be

at once rejected, but the possibility of a gallinaceous tuberculosis be suspected, and inoculation experiments attempted on fowls.

7. The following characteristics of gallinaceous tuberculosis of man may be enumerated: the occurrence of bacilli in very great numbers, their occurrence almost exclusively within cells, and tissue changes which differ markedly both clinically and microscopically from the typical appearances of ordinary tuberculosis.

#### TREATMENT OF X-RAY BURNS.

Bogrow<sup>3</sup> of the dermatological clinic of Moscow remarks that dermatitis from x-rays is comparatively seldom seen nowadays, since our knowledge of their properties has caused the introduction of various precautionary measures. The cases that are on record attest the obstinacy that these lesions offer to any of the conservative measures of healing. In fact, the treatment of these burns is one of the most thankless tasks of the dermatologist, as the degenerative conditions produced in the tissues by the rays can never be repaired.

The therapeutic measures indicated in reactions from the x-rays depend on the intensity of this reaction. In case of a simple Roentgen erythema, cold compresses of lead water may be sufficient, or warm boracic acid applications, soothing ointments and powders. Cocaine, orthoform, etc., have been said to cause increased inflammation and necrosis of the tissues. Injections of morphia are the best means of relief in the case of intense pain. The ulcers caused by the rays are most resistant to treatment, on account of the deep vessel changes and the danger of necrosis of the bone, and the resulting scars often break down.

According to Hagar all methods of treating x-ray burns may be divided into conservative and surgical. In the first category belong warm compresses with substances that have an antiseptic action, such as sublimate, lead water, peroxide of hydrogen, etc. Kollecker obtained good results with a one per cent. solution of creolin. For hastening the process of granulations and epithelial regeneration the ointment of red oxide of mercury, a ten per cent. carbolic oil, an eight per cent. ointment of Scharlach R. have been recommended. Of physical methods, compression by bandages and by Bier's procedure, exposure to electric lamps and radiotherapy have been advised; also, exposure to the sun after treatment with eosin, the Finsen treatment, the galvano-cautery, and carbon dioxide snow. In only a small number of these cases, however, have these procedures proved of marked effect. Surgical intervention was indicated by attacks of pain and fever. In most instances radical operations, consisting of excision of the ulcerated portions, followed by a plastic, have been resorted to.

Roentgen ray cancer can almost always be removed by operative means. Pre-cancerous

keratoses are treated with liquid air, or carbon-dioxide snow. Some of the latter heal by application of nitric acid, or after acute infections.

Bogrow reports the following case treated by the Pfannenstill method. It was that of a woman of 58, who presented a large painful ulcer in the left hypochondrium, caused by the application of x-rays for internal treatment. After some preliminary trial of other forms of treatment, it was decided to resort to Pfannenstill's method. The principle of this is the generation of nascent iodine in the tissues, effected by the internal administration of iodide of sodium, combined with the local treatment of the affected portions with peroxide of hydrogen. The only contra-indication to this method is idiosyncrasy to iodine. In the case reported, the x-ray ulcer, that had shown no sign of healing for five months, began to "clean up" immediately after this method was employed, and to become covered with epidermis. This improvement was interrupted after four months by stopping the treatment, but on its resumption the ulcer was completely healed, with a simultaneous disappearance of the pain. The scar that had been previously hyperemic, became paler. The healing occupied seven months from the beginning of the treatment. Inasmuch as the time of healing of an x-ray ulcer is very long ordinarily, extending sometimes over a period of years, the result of treatment in this case must be considered as particularly favorable.

#### WAR APHORISMS OF A DERMATOLOGIST.

Unna has been sending a series of short articles with the above heading to the attenuated *Berliner Klinische Wochenschrift*. We quote the topics touched on in the issues of this current year, numbered 9, 12, 14, and 18.

1. *Furuncle*. Field surgeons in the present war have told him that the old way of treating boils, by means of a crucial incision, still obtains. As bacteriology has taught that furuncles are due to the penetration of cocci into the hair follicles, it is essential that the lesion be incised in the centre by a perpendicular stab. He recommends his "mikrobrenner" as the best instrument to use, next the finest point of the Paquelin cautery, or a sharply pointed stout needle that has been passed through the flame of a spirit lamp. By this procedure pain and feeling of tension cease at once, and the part should be painless on pressure. The advantages of this method over a crucial incision are that the foci of cocci are disinfected *in situ*, that it destroys these alone and not the contiguous skin, that the pain is instantly relieved and that it leaves no scar.

2. *Furunculosis*. In the field, where baths, soap, and most of the approved methods of treating furunculosis are impossible, the methodical cauterization of all the individual furuncles is the best treatment. When this is not practicable, Unna recommends a paste of kaolin, ich-

thyl and glycerine, in the proportion of 20, 10, and 5, covered by an impermeable dressing. Failing these means, or when there is much irritation, a paste of sulphur, zinc, carbonate of calcium and glycerine may be substituted. A soft mercurial plaster may also be improvised and used with good effect.

3. *Axillary Abscesses.* Surgeons in the field often meet with furuncular inflammations in the axillae in strong healthy subjects, occurring, especially after prolonged sweating. They differ from furuncles in so marked a degree clinically that other organisms than those that cause furuncles must be active. They begin as round nodules in the corium, which increase slowly, accompanied by much inflammation and tension, and become finally soft, fluctuating abscesses which evacuate purulent matter, but no necrotic plugs, as in furuncle, and do not heal spontaneously, like the latter. They recur readily, during months and years, with remissions in the winter, but always locally, in the axillae. They never cause erysipelas, sepsis, or metastatic abscesses. The treatment is the same as that of furuncles.

4. *Weeping Eczema.* Moist affections of the skin, if of any extent, render the subject unfit for service, especially if the customary bandaging is employed. Better are the absorbent drying pastes, of which a good one for the field is composed of sulphur 10, carbonate of calcium 10, zinc oxide ointment 80. This should be employed frequently, but in small quantity. Believing as he does, that eczema is caused by cocci, Unna declares that boric acid, and antiseptic applications in general are powerless against this affection. Drying and reducing agents, such as sulphur, zinc oxide and chalk, are indicated.

5. *Dry Eczema.* For the yellowish, greasy, scaling spots of seborrheic eczema of breast, abdomen, neck and arms, the above zinc-sulphur-chalk-paste is indicated. Callous eczemas require reducing agents. Hebra's ointment is valuable, and salicylic acid and tar are useful adjuvants. Ichthyl, resorcin, and pyrogallol cannot usually be supplied by the field apothecary.

6. *Psoriasis.* A psoriasis, even if quite extensive, does not, in this war, debar from service, as it does not affect the general health, does not itch as a rule, and is serious only when the hands and head are affected. Treatment in the field must naturally be limited to alleviating the worst symptoms and holding the affection in check. Chrysarobin may be obtained, but it must be used cautiously to avoid risk of overstimulation, and consequently should not be used in ointment form. Chrysarobin 2, ol. terebinth 2, collodium 16, may be painted over the whole body with the exception of the head. The oil of turpentine increases the oxidation effect of the chrysarobin on the skin. A white precipitate and sulphur ointment may be used on the face.

7. *Scabies.* In the numerous cases in which the scabies is complicated by an eczema the above mentioned zinc-sulphur-chalk paste may be used

for the inflammation, to which is added from 2-5 per cent. of balsam of Peru, against the scabies. This salve is rubbed two or three times daily into all the infected places till the affection is healed. Pure balsam of Peru is not advisable on account of the high cost, the pain it causes, and its impotence against eczema and furunculosis. For pure cases of scabies Sherwell's sulphur cure is advised, the patient himself rubbing pure powdered sulphur into the places that itch, at any time, but especially during the night. The patient is ordered to rub in sulphur instead of scratching. Two or three days usually suffice for a cure.

8. *Pyodermia. Impetigo Bockhart.* Unna emphasizes the difficulty that surgeons at the front experience in overcoming this class of affections. These affections, the impetigo contagiosa of Tilbury Fox and the impetigo of Bockhart are to be separated from the class of impetiginous eczemas. All the impetigos are caused by the same yellow and white pus cocci or by streptococci. But Bockhart's impetigo is a much more serious affection than impetigo contagiosa as it contains the real pus cocci and may lead to sepsis, and to generalized cases of pyodermia. Bockhart's impetigo, as opposed to impetigo contagiosa, is a rare occurrence in times of peace. In war, it is much more common, and is fostered by the unfavorable conditions. Prophylaxis is of the utmost importance. Boils and panaritium must be carefully treated, as they may infect the adjacent hair follicles. The treatment is the same that has been enumerated above. Thorough soap and water washing of the whole body must be employed when the patient is in a hospital, or when it is possible.

9. *Erysipelas.* Unna considers ichthyl, which was introduced by him in internal medicine and dermatology first in 1884, and in the following year recommended for erysipelas by Nussbaum, as still the only sure external means of treating this affection, but this cannot always be obtained at the front. The internal use of ammonia is recommended in cases in which it is impossible to procure ichthyl, in the following prescription:—

Ammon. Carbonici .....	5.0
Liq. Ammon. anisati .....	5.0
Aquae ad .....	200.0
Syr. simpl .....	20.0

Sig. A tablespoonful every hour or two.

#### MODERN DIAGNOSTIC METHODS IN SYPHILIS.

Fordyce\* of New York, whose opportunities for observation are unsurpassed, read a paper with the above title at a meeting of the New York Academy of Medicine, the summary of which is here copied. It may be recommended to all who have to do with syphilis.

"The Wassermann reaction is one of the most important symptoms of syphilis, the interpretation of which can come only from experience—



prolonged experience and careful comparison of laboratory results with clinical observation."

Fordyce emphasizes the importance of careful clinical training in recognizing the various stages of the disease, and declares that unless the available facilities for laboratory examinations are trustworthy, it is better to be guided by clinical experience alone than to be misled by improperly made or interpreted laboratory tests. "There is great necessity for the standardization of the technic. All modifications introduced up to the present time, have proved inferior to the original method and cannot therefore supplant it."

"A positive Wassermann is pathognomonic of a luetic infection, with the following reservations: Partial or transient complement fixation is sometimes seen in leprosy, yaws, and cachectic states, but it is obvious that, with the exception of leprosy, which is the only disease to present any perplexity in this climate, the clinical diagnosis would offer no difficulty. In the cases of leprosy which have come under my observation the reaction does not occur uniformly, some cases giving the reaction at one time and not at another, or negative and indeterminate with one antigen, while inhibition may be complete with another. An indeterminate or weakly positive reaction is of value as indication for treatment, but is of little importance for diagnosis unless as a concomitant of other symptoms, when it may in many cases be brought out by a provocative injection of salvarsan."

"In interpreting negative reactions one must bear in mind that they may occur with limited tertiary affections, in old infections with the disease limited to the central nervous system, and in women with repeated abortions, or in syphilitic children in whom the infection is remote or has been treated. Alcohol taken prior to the test will sometimes prevent the fixation of complement. Individuals who are addicted to its use should, therefore, abstain for several days before the blood is to be examined."

"In the primary period of syphilis, every effort should be made to establish a positive diagnosis. If the dark field examination is negative and the clinical picture doubtful, repeated Wassermann examinations should be made, as they are usually positive before the outbreak of the secondary rash."

"The Wassermann is positive in the secondary stage in 100% of cases, and is of value in differentiating between early syphilitic eruptions and dermatological affections which simulate them. In the latent stage it is a valuable guide to the effect of treatment. It is impossible at the moment to give the percentage of cases which will remain refractory to treatment and to say to what extent we are justified in continuing to treat such patients."

"Untreated tertiary cases with manifest symptoms give a positive reaction in from 95 to 100% of cases. The test is here of diagnostic import in differentiating luetic affections from tumors or other surgical conditions, and supplies the

etiology in cases of repeated abortions where no history of syphilis is obtainable."

"The provocative reaction is of great aid in cases with suspicious lesions and a negative reaction. It should be applied in all treated cases where the reaction has been negative for a period of a year or more, to determine if a cure has taken place. If it becomes positive, there is an indication for renewal of treatment, and if it remains negative, the provocative should be repeated within a year, following the policy of Gennerich. All patients with symptoms pointing to involvement of the central nervous system should have a lumbar puncture, as well as the latent cases with persistent positive reactions, to determine if there is a latent process in the cerebrospinal system. The puncture is of value, not only in making a differential diagnosis between various neurological diseases, but as an index of the activity of a syphilitic process and a control of the effect of treatment."

"The findings in syphilis of the nervous system are as follows: In tabes the reaction of the blood is positive in 60 to 70%. In the spinal fluid, Phase I and lymphocytosis are usually marked in about 100% of well developed cases with active manifestations. The Wassermann is positive with larger amounts of fluid, and about 20% give a reaction with 0.2 c.c. or less. In the early forms of the root-type, the serological picture may be practically negative; whether these cases will give positive findings later on, only further observation and time can tell. In the degenerative forms, where all activity has subsided, the results are negative."

"In tabo-paresis and paresis the picture is about the same, i.e. a positive reaction in the blood in about 100% of the cases; in the fluid a positive Phase I and a variable lymphocytosis with a positive Wassermann in larger amounts in 100%, and with 0.2 or less in about 95%."

"In cerebro-spinal lues the reaction in the blood is positive in 70 to 80%, Phase I is usually positive, pleocytosis is variable, complement fixation is positive in large amounts; a smaller percentage fixing with 0.2."

"In cerebrospinal arteritis the blood may or may not give a positive reaction. The findings in the fluid may all be negative, excepting the globulin reaction, unless there is an accompanying meningitis."

#### THE ALOPECIA OF HYPOTHYREOSIS.

Montgomery<sup>3</sup> of San Francisco reports an interesting case that he considers to have been of this etiology. He remarks that a diminution or absence of the secretion of the thyroid gland is known to cause the following changes in the skin: Myxedema, roughness and dryness of the skin; yellow complexion with a rather circumscribed redness of the cheeks, called the "malar flush"; dry seborrheic coating of the scalp, constituting at times a thick crust; dryness, lack of lustre and wiriness and defluvium of the hair;

acroparesthesias; chilly feelings of the cutaneous surface; dystrophies of the nails.

The case in question was that of a man of 41, of sedentary habits, whose hair had been thinning at the vertex and retreating from the forehead for two years before he came under observation. The scalp was covered with greasy, tightly adherent scales. It was a type of the senile seborrheic variety, as it occurs in the male.

The face of the patient was considered important, being fat, heavy, and expressionless, with a dull thick skin of a lemon-yellow color, a red nose, a flush over the malar prominences, blue ears and pallid eyes. The lips were heavy, voice husky. There was in winter a pruritus of the thighs and legs which became purpuric on scratching. The gums were swollen and the teeth loosening. The thyroid gland could not be demonstrated.

He was put on a careful diet and given five grains of thyroid extract a day, under which regimen he improved rapidly. Eight months later the hair was growing rapidly, there being a new growth in some places where the fall had been complete, as at the frontal margin of the scalp. The nose became less red, and the condition of the gums improved. He began, however, to lose in weight, so the thyroid was cut down to one and a quarter grains. He then regained his weight, his health continuing to be good, and his hair, gums and teeth to maintain their improvement.

Although myxedema, one of the most characteristic symptoms of hypothyroidism, was lacking in this case, Montgomery considers that the other symptoms were sufficient to place it in this class. The loss of weight, which was arrested on decreasing the dose of thyroid extract, is considered as additional evidence in this regard. It has been claimed that a moderate degree of thyroid inadequacy is not infrequent, and that people in middle life are often benefited by thyroid treatment, both as regards their general health, removing excessive corpulence, and promoting the growth of hair; and that these good results may be due to the actual replacement of a function that is being insufficiently discharged. This is evidently what occurred in the present case. The faulty oxygenating processes were re-established by the thyroid extract so that the digestive and blood-making functions were stimulated. The writer asserts that he had never before seen anything like the condition of the gums shown by this patient, but as it improved on taking the thyroid extract, he considers that it may legitimately be regarded as one of the phenomena of hypothyreosis.

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- <sup>2</sup> Lipschütz: *Archiv. f. Derm. u. Syph.*, 120, 1914.
- <sup>3</sup> Bogrow: *Archiv. f. Derm. u. Syph.*, 1914, 120.
- <sup>4</sup> Fordyce: *New York Medical Journal*, Sept. 26, 1914.
- <sup>5</sup> Montgomery: *Journal of Cut. Dis.*, April, 1915.

## Reports of Societies.

## TRANSACTIONS OF THE THIRTIETH ANNUAL MEETING OF THE ASSOCIATION OF AMERICAN PHYSICIANS.

HELD AT WASHINGTON, D. C., MAY 11, 12 AND 13, 1915.

(Continued from page 328.)

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"The Mechanism of Anaphylaxis and Anaphylatoxin Production." By F. G. NOVY, Ann Arbor, Mich.

26

"The Relationship of Chronic Protein Intoxication in Animals to Anaphylaxis." By WARFIELD T. LONGCOPE, New York, N. Y.

In the use of foreign proteins for anaphylaxis investigations certain necrotic lesions have been noted in the liver, the kidneys and the heart muscle of experimental animals. It was thought at first that these lesions were anaphylactic in origin and that they were due to a previous sensitization; but later it was shown that they occur after a single dose of protein. The question thus arose whether the lesions were due to anaphylactic shock or to direct toxic action of the protein.

In two series of animals, one group was given repeated doses of a single protein; a second group was given one dose of mixed proteins. All of the animals in the first group were found to have the lesions in the kidneys, liver and heart muscle. Those in the second group occasionally had them. Thus it was shown that there is no difference as regards the action of different foreign proteins. The question then arose as to the time of the occurrence of the lesions. Animals were found in eight days to have developed a local sensitization as expressed by a skin reaction which could be excited at the point of inoculation. In twenty days after a single large dose of horse serum, the necrotic changes may be found in the liver, kidneys and heart muscle and at the same time the skin reaction becomes more intense. These observations tend to show that the lesions alluded to are due to anaphylaxis and not to direct toxic action of the protein.

## GROUP ON INTERNAL SECRETIONS.

27

"Studies on the Relation of Hypersusceptibility and Insusceptibility Induced in Guinea pigs by the Instillation of Horse Serum into the Nose." By HENRY SEWALL and CUTHBERT POWELL, Denver, Colo.

In work reported a year ago, there appeared certain peculiarities in the course of immunological reactions which were dependent upon giving the antigen through the nose. Further observations have been made in an effort to work out the idiosyncrasies of reactions produced by this channel. A priori it appears that these matters are expressions of nature and of physiology; but most experiments begin with a surgical operation of some sort—big or little. The nasal method had been adopted in order to avoid any operative procedure and because the amount of antigen absorbed by a natural route is more nearly parallel with nature.

The method adopted was this; a guinea pig was gently held on its back and 3 minims of horse serum dropped into its nose; the procedure was repeated at intervals varying from twelve hours to twenty five days. Forty-one guinea pigs were treated thus every other day for 6 days; in 16 days the instillation of a double dose into the nose was followed by the death of 21 of the pigs from anaphylactic shock; but 20 of the pigs lived; some of them had a hard time, some had no symptoms at all. When the serum instillation was repeated on the 24th day, still the pigs did not die and those that reacted did so less strongly; the reactions were still less marked after a third instillation, and still less after a fourth. What takes place as a result of these nasal instillations? It is taken for granted that absorption must take place; but how much of the horse serum is absorbed? Rosenau found that 0.000,001 cc. may sensitize a guinea pig; it may be assumed that about 0.000,001 cc. was absorbed in these pigs, at any rate after repeated instillations, each did something to the pigs. Two instillations were usually sufficient to produce a protective effect.

Anderson found that immunization could not be induced in certain children by the use of subcutaneous injections of diphtheria toxin; others said it could be done with difficulty. But it may be done without harm by dropping undiluted diphtheria toxin into the nares of children. Two successive nasal instillations with an interval of 24 hours, and a third instillation in 6 days, in a few cases protected against very toxic doses injected.

These results are so different from generally accepted facts that they are presented for what they are worth. With these findings an explanation of the internal situation is necessary. Theoretically, the blood ought to be loaded with antibodies; but this is not found to be so. Dale, following Stulz, says that after repeated injections the uterus becomes very sensitive to antigens, but that in several instances in which the uterus came from desensitized animals, it was not sensitive. The writer found that a protected pig after 36 days nearly died from an injection of 1 cc. horse serum; but that two pigs kept 101 days did not react at all to 1 cc. serum. According to most authorities, these pigs should have been resensitized. His own idea is that the antigen produces some metabolic changes protective against subsequent doses. He found some pigs made refractory by injections of blood from protected pigs. Pigs born of mothers protected by the nasal method exhibited some resistance.

His conclusion is that resistance of the type dealt with in his work must be a tissue resistance; certainly the serum in his cases was very poor in antibodies in the ordinary sense.

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"Studies in the Pathology of Pituitary Dystrophy."

a. "Post Mortem Elevation of Temperature."

b. "The Nature of the Fat Changes in the Liver and Panniculi." By ALFRED S. WARTHIN, Ann Arbor, Mich.

29

"Pathological Changes Arising from Overaction of the Cervical Sympathetic." By WALTER B. CANNON and R. FITZ, Boston, Mass.

The right phrenic nerve of cats was connected with the cervical sympathetic, the idea being that when fibres of the cervical sympathetic below the

superior cervical ganglion were thus connected with the phrenic they would be activated by a volley of impulses with every breath the animal drew. Several animals survived the operation and after a time developed curious symptoms. One of these is a great increase of the rapidity of the heart rate; in normal cats the pulse rate is 159, but in the treated cats the rate went to about 225. There is a characteristic looseness of the stools. There is some alopecia and a sort of scleroderma in places; there is evidence of pruritus. The cats become more irritable. There is a marked increase of metabolism: the calories lost per sq. meter per hour being in normal animals 31 and in treated animals from 58 to 72. The increased heat output is attended with loss of weight. There should be mentioned also an increase of the pupillary slit on the operated side and exophthalmos. These conditions progress until the animals go to pieces.

All these facts seem to indicate that the condition is due to over-activity of the thyroid gland produced by overstimulation of its innervation. A question to be answered is why do not the normal emotional stimuli cause the same symptoms under ordinary conditions, while in pathological states they do? The hypothesis is advanced that there is a protective threshold between the preganglionic and the post ganglionic fibres, but that when the threshold is worn down by repeated stimuli under adverse circumstances impulses are permitted to pass over and symptoms of hyperthyroidism arise.

## GROUP ON NEPHRITIS.

30

"Studies in Nephritis." By HENRY A. CHRISTIAN, CHANNING FROTHINGHAM, JR., JAMES P. O'HARE, and ALLEN C. WOODS, Boston, Mass.

a. Test renal meals in relation to renal function.

The main conclusions derived from these studies were: (1) Of the two general methods that of von Monakow requires 10 days while that of Hedinger-Schleyer requires but three, and that as much can be learned from the three day method as can be learned from the longer. From the standpoint of economy both of patient's time and hospital care, the shorter method is to be preferred. (2) The results obtained from the two methods are similar but not quantitatively identical. For the Hedinger-Schleyer test there is no constant curve of secretion: evidences of abnormality consist of more or less fixation of concentration and of output. Fixation of N-output is the last evidence of abnormality to become appreciable.

b. Quantitative studies of the non-protein nitrogenous bodies of the blood.

Urea nitrogen constitutes the major portion of the increase in nitrogen retention and is proportionate to the non-protein nitrogen. The creatinin increase tends to be proportionate to the other forms, but the unknown forms constitute the greatest source of non-protein nitrogen.

The nitrogen in spinal fluid was also quantitated; there was no advantage in this method over blood estimates.

c. Diuresis in relation to diuretics.

Diuresis in response to diuretics is infrequent in hospital patients. The total intake and output of fluid was measured and only 15% of the cases showed any diuresis: diuresis being defined as any day's output in excess of 1800 cc. or in excess of

intake. When diuresis does occur it is most commonly seen in cardiac cases; in these digitalis and forced fluids are the most potent measures. Next in frequency of occurrence was diuresis induced in nephritis: one half of these responded; the most constant cause of diuresis was digitalis given in cardiac decompensation. The next group in point of frequency in which diuresis was observed was of diabetes and typhoid fever in which diuresis occurred after increased intake of fluid.

There were 10 cases of nephritis in which no diuresis could be induced with theocin, theobromine sodiosalicylate, sodium citrate or caffeine. This provokes skepticism as to the efficacy of these agents. There was no edema in these cases; therefore, no decompensation. In a small group with edema not due to decompensation (electrocardiograph), diuresis was very uncertain.

Diuretic drugs do produce diuresis but only in the right kind of cases. Diuresis may most often be induced in cases of combined renal and cardiac insufficiency; the best results follow theocin and digitalis, but in a few cases theobromine sodiosalicylate and digitalis act better than the first combination; why this is so is not known. Diuretics act best in cases with edema. If no edema is present diuretics do no good and may possibly do harm.

d. Functional tests in relation to anatomical changes in the kidney.

No more accurate anatomical diagnosis can be made with functional tests than without.

## 31

"Is There a Clinical Picture of Suppurative Nephritis?" By RICHARD C. CABOT, Boston, Mass.

## 32

"Poisoning with Bichloride of Mercury and its Treatment." By SAMUEL W. LAMBERT and HENRY S. PATTERSON, New York.

## 33

"The Isolation of a Toxic Substance from the Blood of Uremic Patients." By NELLIS B. FOSTER, New York, N. Y.

## GROUP ON DIABETES.

## 34

"Long Fasting in Diabetes." By FREDERICK M. ALLEN, New York, N. Y.

Partial pancreatectomy with retention of the duct produces a satisfactory experimental diabetes, and animals prepared in this way can be studied advantageously. In mild experimental cases dietetic management suffices to keep the diabetes in abeyance. More severe cases quickly pass into an uncontrollable condition. If, in controlled cases, glycosuria is allowed to reappear, the animals quickly go down with destruction of the islands of Langerhans. Those kept sugar free stay lively and show no injury of the islands.

Patients at the Rockefeller Institute have been treated on the basis of these animal experiments. An initial fast of from 1 to 8 days will completely stop glycosuria in most cases. Fasting can be undertaken in very severe, weak cases without injury, but with benefit. There are some unsuccessful cases due to infections or other complications but these do not constitute contraindications to fasting.

If undesirable symptoms arise in the course of fasting, after an interval of careful dieting, fasting can be resumed and carried to success. If after fasting and becoming sugar free, as Joslin has shown, the sugar and acidosis are allowed to return, the last state of that man is worse than the first. But cautious underfeeding, with occasional fast days, will suffice to keep these patients in good condition. Well established is the advantage of keeping the patients below weight and of maintaining a low fat content in the diet, thus reversing the doctrine of Naunyn and others. Dietetic restrictions are renewed on the detection of ketonuria or increase of blood sugar. To insure freedom from ketonuria and glycosuria fat is necessarily withheld from diet.

The salient features of the paper are:

1. In diabetes an increase of weight or of metabolism throws increased strain on the pancreas and does harm.
2. Fasting suffices to render the blood and urine sugar free.
3. A suitable diet and intercalated fast days will keep diabetics sugar free.
4. The paper opposes the idea of keeping diabetics up to the highest level of weight and nutrition.
5. It opposes the doctrine that calories lost in the urine must be replaced in the diet. It is found that feeding fat for this purpose results in return of sugar.

The treatment suggested has been practically applied in many cases and is applicable by the practitioner everywhere.

The question remains whether diabetes is a progressive disease or a temporary metabolic error. If the first, the treatment will keep diabetics comfortable for a time; if the second, the treatment will keep them well.

## 35

"Present Day Treatment and Prognosis in Diabetes." By E. P. JOSLIN, Boston, Mass.

It is no exaggeration to say that the advance in the treatment of diabetes during the past year has been greater than any since Rollo. This is not by chance, but it follows work done in the laboratory and clinic, and is an eloquent answer to the critics of animal experimentation.

The advance in treatment has been such that we can now teach patients to observe themselves, to examine their urine, to manage their dietary; because the physician can now control the situation absolutely. Thanks to Dr. Allen's work, we now no longer nurse diabetics, we treat them.

Patients in the writer's practice have done better this year than ever before. Statistics are given.

Children do well under the fasting method; they obey readily and cooperate well. Complications disappear more rapidly than under any other management, especially carbuncles. A case of pregnancy with glycosuria to 6%, was carried successfully to term and was delivered by Caesarean section with recovery of mother and child. Operations of others sorts have been successfully carried out on diabetics. Cases of long duration and cases with severe acidosis do well under starvation management.

Some of the advantages of the method:



1. We have an attainable ideal toward which to work: to get patients sugar and acid free.
2. We are relieved of the machinations of quacks and the exploitation of drugs and patent foods.
3. The patient is relieved of the expense of long treatment and may go back to work.

Whether this treatment will influence those cases which under other regimes went on to sclerosis remains to be seen.

The following points are important in the technic of the fasting treatment: patients must be educated just as they have been in tuberculosis; they must not gain weight too fast; they must rest; they must remain under observation.

Query: Does coma represent a termination of diabetes? or, rather, is it not an avoidable accident?

36

"A Study of the Acidosis Occurring in the Nutritional Diseases of Infancy." By JOHN HOWLAND and W. McKIM MARIOTT, Baltimore, Md.

37

Mild Diabetes in Children." By DAVID RIESMAN, Philadelphia, Pa.

Fatal diabetes is at times an unavoidable accident in youth, but a mild diabetes occurs which may be satisfactorily treated.

A series of four cases is given in detail, all of which readily responded to dietetic treatment and all recovered.

The cases seem to belong to a well defined group called by Solomon, of Vienna, innocent diabetes of the young.

Glucose can no longer be recovered from the urine of the cases reported; this shows the high carbohydrate tolerance which can be regained. These cases of mild juvenile glycosuria may belong to the renal type.

1. There exists a mild type of glycosuria in juveniles.
2. There may be several cases in the same family.
3. The patients do not usually show the ordinary collateral symptoms of diabetes.
4. They are readily influenced by dietetic management.
5. They get well.

38

"Studies in Experimental Pancreatic Diabetes." By A. A. ERSTEIN and S. BAHR, New York, N. Y.

Only recently has it been possible to study glycosuria from the blood standpoint. By using the picric acid test of Allen and Benedict it is possible to get remarkably exact estimates in small quantities of blood.

The studies were made on depancreatized cats. Because of excessive thirst and large water intake, it was necessary to estimate changes in blood volume, which was done by a method of comparing the proportion of cells to plasma. Corrections of the blood sugar findings were made for blood volume fluctuations. The results of the corrections show a surprising difference from direct findings. Statistics were given.

All the cats showed a progressive rise in blood sugar, quite marked just before death. (This is not due to tissue decomposition because the rise begins while the animal is quite lively.) With the appearance of hyperglycaemia there is a diminution of

glycosuria. This is no doubt due to a renal insufficiency for sugar. For the reason that polyuria continues after the disappearance of sugar, failure of circulation is ruled out as a cause.

Experiments with pancreatectomy and double nephrectomy resulted in the production of a rise in hyperglycaemia, rapid in well nourished animals; in strayed cats this rise was late in appearing but when it appeared it was acute and reached the same level eventually as in the well fed cats.

39

"Intravenous Injection of Dextrose and Depancreatization." By I. S. KLEINER and S. J. MELTZER, New York, N. Y.

GROUP ON SYMPTOMATIC TREATMENT.

40

"The Actual Value of Symptomatic Treatment." By JOSEPH L. MILLER, Chicago, Ill.

Symptomatic treatment is now generally neglected. Is this a step in progress or only a manifestation of the scientific spirit? Is symptomatic treatment valueless, or is the physician merely impatient of any treatment that does not bear scientific scrutiny? Should not the problem be approached by inquiries into whether the symptoms themselves do any harm? or whether they hinder recovery?

When applied to undesirable symptoms, the use of dependable drugs is strictly scientific. The use of morphine in pneumonia with violent pleuritic pain; of adrenalin in spasmodic asthma; of alkalis in digestive disorders with hyperacidity; in all these conditions the application of the remedy to the symptom is unassailable from a scientific standpoint.

There is another group of symptoms, however, and another group of drugs, which have become related in one way or another: certain symptoms calling to mind certain drugs, not on scientific grounds, not always on reliable empirical grounds, but by virtue of habit, custom or unjustifiable repetition in the books. Such symptomatic treatment has no standing; and here a thorough revision of therapeutics needs to be made. Perhaps one of the most useful ways to attack this problem would be by teaching students the natural course of untreated diseases.

An authoritative evaluation of symptomatic therapy is of the utmost importance both for the comfort of our patients and also for clearing up the field of experimental therapeutics.

(To be continued.)

### Book Reviews.

*The Curative Action of Radium.* By DR. SIGMUND SAUBERMANN, Charlottenburg, Germany. 1915.

This monograph is the reprint of an address on the progress of radium therapy delivered by the author at a meeting of the Roentgen Society in London on April 1, 1913. It presents the results of his research work on this interesting subject. It is well illustrated with a series of thirty-five half-tone illustrations, eight of which are engravings from photographs.

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### CARLYLE'S OPINION OF PHYSICIANS.

THOMAS CARLYLE was a man with as positive ideas about doctors as those he held on all other subjects, and his manner of expressing them was equally original and forcible. In her "Memories of Victorian London," quoted in the issue of the *British Medical Journal* for Nov. 30, 1912, Mrs. L. B. Walford recalls a meeting with Carlyle one day during his residence in Chelsea. He was looking ill, but refused to see a physician.

"A friend related the following story: 'Did you ever hear how he turned on a poor country practitioner down at my brother-in-law's place, where he had an attack which frightened everybody, for it was uncommonly like cholera, and cholera was about? My brother-in-law took it upon himself to send for the village doctor, a worthy old fellow with a long-established practice, and you may suppose Aesculapius was not a little flustered and flattered at being summoned to such an illustrious patient. With the utmost alacrity he made his way to the Hall, and was shown upstairs to the patient's bedroom, but

there his self-complacency received a rude shock. My brother-in-law told me he did not know which way to look when a shaggy head uplifted itself from the pillows and peered over the bed-clothes. "Who's that?" He replied that it was the doctor, whom he had thought it right to send for. "Doctor?" thundered Carlyle. "I'm for none of your doctors. Of all the sons of Adam, men of medicine are the most unprofitable." 'And the poor, unprofitable man of medicine found it impossible to obtain a hearing,' said our informant, shaking his head, 'and had to retreat ruffled and terrified. The worst of it was that his visit so annoyed and roused the Sage that it put fresh spirit into him, and he began at once to get better, all the time railing at doctors, and triumphantly pointing to his own case as proving his point against the faculty!'"

Carlyle's opinion about doctors, however, was not always of this nature. His own brother was a physician, and in his correspondence, Thomas several times speaks favorably of the profession. At the annual meeting of the British Medical Association in Bristol in 1894, Dr. Yeats presented a letter from Carlyle addressed to his publishers in Edinburgh:—

"It was addressed to a firm of Edinburgh publishers who had sent him a book published by them, written by one who hid his identity under the pseudonym 'Therapeutes':

"Chelsea 25th Feby. 1859.

"Dear Sir—I have received your book which you were kind enough to send me, and I beg to return you thanks for the same. It is a book (unlike many that come to me here) of a serious nature, the fruit of long study, meditation, inquiry, and evidently of perfect conviction on your part.

"I believe, and have long believed, the essential idea it sets forth to be not only true, but of the very highest importance to mankind, namely, that the Physician must first of all be a priest (that is to say, a man of pious nobleness, devoted to the service of the Highest, and prepared to endure and endeavor for that same, taking no counsel of flesh, and blood, as the theory of Priests is),—first of all, a real priest, and then that the whole world should take supreme counsel of him, as it does of its real or imaginary Priests or Pontiffs this long while back, and follow said counsel as the actual will of God,—which it would be were the Physician what I say.

"It is curious to remark that Heilig in our old Teutonic speech is both Holy and also Healthy; that the words Holy and Healthy, as our antique fathers understood them, are one and the same. A thousand times has that etymology risen sorrowfully upon me, in looking at the present distracted position of affairs, which is horrible to think of, if we look earnestly into

it, and which cannot well be spoken of at all. We, sure enough, have completely contrived to divorce holiness (as we call it) from health, and have been reaping the fruits very plentifully during these fifteen hundred years.

"The notion of bringing our present distracted anomaly of a Physician into union with our ditto ditto of a Priest, and making them identical is, of course, extremely chimerical; nor can one easily say what ought to be the first step towards bringing each of them back from his anomalous imaginary condition and nearer to veracity, and the possibility of coalescing. But I am very glad to see the idea started, in any form, under any vesture, and heartily wish you success in bringing it home to men's minds.

"I remain, yours truly,

T. CARLYLE."

In a later issue of the *British Medical Journal* (Dec. 7, 1912) is quoted another letter by Carlyle, under date of Jan. 18, 1842, to Dr. James Hutchison Stirling, first published in Miss Stirling's biography of her father.

"Practically, my advice were very decidedly that you *kept* by medicine; that you resolved faithfully to learn it, on all sides of it, and make yourself in actual fact an *'larpòs*, a man that *could heal disease*. I am very serious in this . . . A steady course of professional industry has ever been held the usefulest support for *mind* as well as *body*: I heartily agree with that. And often I have said, What profession is there equal in true nobleness to medicine? He that can abolish pain, relieve his fellow mortal from sickness, he is the indisputably usefulest of all men. Him savage and civilized will honor. He is in the right, he is in the wrong who may. As a Lord Chancellor under one's horse-hair wig, there might be misgivings; still more perhaps as a Lord Primate, under one's cauliflower; but if I could heal disease, I should say to all men and angels without fear, '*En, ecce!*'"

Apparently his opinion of doctors was really a good deal better than might have been inferred from the Chelsea episode.

### THREE TYPHOID TREATMENTS.

As long as human psychology remains what it is, the desire for exactness will impel medical investigators to search for specifics. It is, of course, a pleasant thing to be able to make the diagnosis and then prescribe with the knowledge that the disease will crumple up before your attack like a mob before a determined sheriff. Those who have intubated a child about to become asphyxiated with laryngeal

diphtheria and have had the patient sitting up laughing and talking a few minutes later have experienced what is, perhaps, the most striking example of the pleasurable feeling of almost omnipotence that now and then seizes mortals. The popularity of surgery, as well as its appeal to lay minds, is based upon the specific nature of its treatment. It is but natural that typhoid fever, for so many years recognized as a disease entity, should have had its share of investigation with the idea of obtaining a specific treatment. There has grown up a literature on the subject, and one form of therapy after another has had its vogue only to be discarded. The present trend seems to be towards some sort of serum or vaccine treatment, and it is interesting to note that there have appeared recently and almost synchronously the reports of three of these methods, all with apparently good results.

In Germany Dr. Eggreth has reported<sup>1</sup> forty-eight cases treated with Besredka's vaccine, one injection only being given in each case. Thirty-eight of these showed good results, a crisis appearing in from six to ten hours and the temperature remaining normal thereafter. In thirty-four of these cases the temperature stayed normal permanently, in one case there was a slight rise from some unknown cause, and in three cases there were complications which caused some fever. In eight of the forty-eight there were no results apparent from the injection; it is worthy of note that all of these had complications, but all recovered. Two cases died within three hours after the injection, one of these cases had pneumonia and the other intestinal hemorrhage.

Drs. Goldscheider and Angst report<sup>2</sup> 57 cases treated with dead bacilli, all, according to them, with good results. In each case there was an initial increase in temperature which lasted several days, and then a crisis occurred, with improvement in the clinical symptoms. These doctors state that this treatment is contraindicated in cases with pneumonia, hemorrhage, weak heart or high blood pressure.

In England Drs. Bourke, Evans and Rowland have reported<sup>3</sup> the use of autogenous living vaccine with good results. The injection of this is followed by marked constitutional symptoms. There is a sharp increase of temperature during the first few hours, followed by a marked fall twenty-four hours later, together with improvement of the clinical signs. According to

these English investigators this form of treatment cuts short the duration of the disease.

With all the above favorable reports, the physician finds himself with considerable latitude in the way of serum therapy, although it will doubtless be the opinion of most of our profession that sufficient cases have hardly been treated as yet by any of these methods to justify generalities. Moreover, it is to be hoped that the increasing popularity of typhoid vaccination will in time make typhoid fever a clinical curiosity.

<sup>1</sup> *Wiener klin. Wochenschrift*, 1915, xviii, 209.

<sup>2</sup> *Deutsch. med. Wochenschrift*, 1915, xli, 361.

<sup>3</sup> *British Medical Journal*, 1915, 2591, 584.

### PREVENTION OF MOTOR ACCIDENTS.

In the issue of the *Medical Record* for Aug. 7 is an admirable editorial, suggesting the importance and desirability of more adequate examination of automobile drivers before their licensure. If the whole number of lives lost or injuries received each year due to motor-driven cars and boats were published, the large total would be a surprise to most readers. In this day of preventive study it is safe to say means can be adopted, when public opinion is ready to demand it, to make a reduction in this list.

How many intelligent people would risk their lives in a railroad train or steamboat, particularly in search of pleasure, if the pilots and engineers were required to conform to no more physical and mental standards than are required of motor boat or motor car drivers? It is for public protection that boats and trains are run neither on faith, ignorance or under the influence of alcohol, but as they should be by clear headed persons having knowledge of the construction and care of their machines with tested training and experience in the "rules of the road." Railroads and governments do not employ medical examiners for the fun of spending money or the pleasure of annoying engineers and pilots. Yet without all the safeguards demanded of railroads and steamboats, almost any one, normal or defective, may run his own high power motor boat or motor car through public waters or streets.

It is common to hear pilots complain that one of their troubles in the summer months is to keep out of the way or out of harm with a motor boat, run regardless of navigating rules. Also

normal auto drivers have a like experience on the road in trying to puzzle out what the fellow ahead or behind is going to do next. This does not mean that most drivers are in this class, but there are enough to keep the careful nervous.

The time has come when the pedestrian and careful driver ought to be protected. Medical examiners could be appointed through civil service by state or government with adequate salaries to give whole time service by being appointed to districts to examine from time to time persons wishing to run boats or cars and to keep on file official records of all applicants. This would show the number of persons applying that are color blind, deaf, mentally defective, with defective vision or any other nervous or physical defect.

With the information furnished, the licensing board would be able to decide as to what form of permit is to be issued, whether to allow the person to run a high- or low-powered motor. With persons physically fit it ought not to be difficult to weed out the wilful breaker of the road rules and the alcoholic by the court refusing a license or revoking a license in addition to other penalties if such driver was at fault in an accident. This is no more than pilots and engineers have to suffer.

The motor boat and automobile in healthy hands are valuable acquisitions to present life and should be encouraged. The pedestrian also still feels a desire to live and keep the parts of his body together if possible.

### OLD TESTAMENT MEDICINE.

THERE are many references in the Old Testament to disease, plagues, afflictions, palsies, etc., but these terms often seem to have several different applications or are so loosely used that their meaning cannot be definitely ascertained. In the *Scientific American Supplement* for July 31, Dr. Stuart B. Blakely has published an interesting account of the medicine of the Old Testament. His study of that document seems to have been so thorough that it is impossible here to do more than mention a few of the fruits of his inquiry.

Dr. Blakely asks us to remember that in dealing with the medical annals of the Old Testament we have at hand only the non-med-



ical literature of a primitive, nomad race and many of the references are obscure to the point of unintelligibility to the modern reader. The earliest references to medical topics in Biblical history would seem to indicate that the priests were the only doctors among the early peoples. The land of Egypt was famous for its healers, and kings of other countries sent for its physicians when their royal healths became delicate. The ancient Egyptians held that the liver was the source of happiness, which opinion may not be so far off after all. The Hebrews possessed the palm for hygiene and had numerous laws in regard to personal habits, community sanitation, and kindred subjects, which might almost be taken as models even today.

Leprosy is generally supposed to have been prevalent in those days, and yet we find only five references to it in the Old Testament, and some of the cases mentioned probably were not that disease. Skin disorders, wherever they were general in distribution and chronic in nature, were called leprosy. The term plague, too, seems to be greatly misused by the Biblical writers. We think of it as the bubonic plague, or "Black Death," to use the highly picturesque name by which it is commonly known, but in the Old Testament plague is loosely applied to any epidemic where the mortality was great. It does not seem likely that these were all instances of the great Black Death which killed one and a quarter millions in Germany in the middle ages and 70,000 in London in 1664. On careful analysis of the various plagues mentioned in this part of the Bible, Dr. Blakely comes to the conclusion that of the five among the Israelites only two were probably the Black Death. The sixth plague of the Egyptians seems to have been either anthrax or smallpox. The description of the plague of the Philistines reads like syphilis.

#### DEATH OF TWO EMINENT PHYSICIANS.

THE almost simultaneous death of two eminent physicians and scientific investigators, chronicled in another column of this issue of the JOURNAL, emphasizes one of the inevitable tragedies of peace in the midst of those of war. Dr. Ehrlich was famous chiefly as the inventor of salvarsan, a synthetic drug which not only is the product of brilliant and patient skill in research, but, as one of the few and most effective

medicinal specifics, also had radically changed and improved the therapeutics and prognosis of syphilis. Dr. Finlay, one and the only survivor, of Reed's original Yellow Fever Commission, not only shared the perils and hardships of the labors of that devoted body, but was really the first to suggest the analogy of yellow fever to malaria as a disease of mosquito transmission. A full account of the lives of these men will appear in an early issue of the JOURNAL. Their death is matter for universal regret, for the benefits accruing from their work are to all mankind without distinction.

#### MEDICAL NOTES.

**EUCALYPTUS IN MENINGITIS.**—A press report from Melbourne, Australia, by way of London, on Aug. 11, chronicles an announcement by Dr. Richard Bull, director of the bacteriologic laboratory of the University of Melbourne, that oil of eucalyptus is a specific coccicide for the diplococcus intracellularis meningitidis. The truth and possible therapeutic value of this observation remain to be determined by scientific report and further clinical study.

**PREVALENCE OF MALARIA, MENINGITIS, POLIOMYELITIS, SMALLPOX, AND TYPHOID.**—The weekly report of the United States Public Health Service for Aug. 6 notes that during the month of June, 1915, 300 cases of malaria were reported in Arkansas and 1030 in Virginia. During the same period there were in Virginia 19 cases of cerebrospinal meningitis, 20 of poliomyelitis, 115 of smallpox, and 258 of typhoid. In New York there were 33 cases of meningitis, 10 of poliomyelitis, and 255 of typhoid. There were 24 cases of smallpox in California, 35 in Arkansas, 170 in Iowa, and 135 in Texas. There were 54 cases of typhoid in Arkansas, 76 in California, and 109 in Texas.

**AMERICAN PUBLIC HEALTH ASSOCIATION.**—The forty-third annual convention of the American Public Health Association is to be held at Rochester, N. Y., next week, from Sept. 6 to 10, inclusive. In conjunction with this meeting will be held also the fifteenth annual conference of the Sanitary Officers of New York State. The present officers of the American Public Health Association are: President, Prof. William T. Sedgwick of Boston; vice-presidents, Dr. C. J. Hastings of Toronto, Dr. Juan Guiteras of Havana, Cuba, and Dr. C. E. Terry of Jacksonville; secretary, Prof. Selakar M. Gunn of Boston; and treasurer, Dr. Lee K. Frankel of New York.

In his call for this meeting Professor Sedgwick said: "This year we must beseech all the Americans to prepare to deal with unusual invasions of minute, mostly invisible, but often multitudinous and powerful enemies. We must defend American cities and American homes against typhus as well as typhoid, against Asiatic cholera as well as smallpox, and against bubonic plague as well as dysentery. Meanwhile, cancer and inanition, poverty and unemployment, gluttony and intemperance, uncleanness, bad air and perverted appetites will not abate, but rather exacerbate their activities because of war and its evil influence upon public health."

At the opening session Professor Sedgwick will deliver his presidential address on "Achievements and Failures in Public Health Work." The meetings of the six sections, composed respectively of health officers, laboratory workers, vital statisticians, sanitary engineers, industrial hygienists, and social workers, will deal in appropriate symposia with various problems of public health education, milk, death rates, administrative control of infectious diseases, infant mortality, the practical use of municipal vital statistics, sewage disposal, industrial morbidity and mortality, and control of venereal diseases. Among the Massachusetts physicians who will present papers are the following: Dr. F. G. Curtis of West Newton on "Is the Control of Measles and Whooping-Cough Practicable?"; Dr. G. W. Simons, Jr., of Boston on "Garbage Disposal in Small Towns"; and Dr. William H. Davis of Boston on "The Registration of Non-Resident Deaths." "Efficiency in the Worker and Its Maintenance" will be discussed by Dr. W. I. Clark of Worcester.

**EXPECTATION OF LIFE IN VARIOUS COUNTRIES.** In a recent issue of the *Journal of State Medicine*, quoted in the *Boston Transcript* of Aug. 11, the superintendent of the Scottish statistical department compares the expectation of life of male and female infants in various countries, as shown in the following table:—

Country	Date.	Expectation.	
		Male.	Female.
Scotland .....	1891-1900	44.68	47.44
Scotland .....	1881-1890	43.92	46.33
Scotland .....	1871-1880	40.95	43.80
Sweden .....	1861-1870	40.33	43.86
England and Wales*	1901-1910	54.55	57.00
England and Wales*	1910-1912	51.50	55.35
Norway .....	1891-1900	50.41	54.14
Denmark .....	1895-1900	50.20	53.20
Scotland .....	1911	48.33	50.14
Holland .....	1890-1900	49.20	49.00
France .....	1898-1903	45.74	49.13
Belgium .....	1891-1900	45.39	48.84
England and Wales .....	1891-1900	44.13	47.77
Massachusetts .....	1893-1897	44.00	46.61
Finland .....	1891-1900	42.90	45.00
Italy .....	1890-1902	42.83	43.17
Germany .....	1891-1900	40.56	43.97
Austria .....	1900-1901	37.77	39.87

\* From a table not yet published.

**BUBONIC PLAGUE IN HAVANA.**—A case of bubonic plague was reported in Havana on Aug. 16, the first since the outbreak of the disease in that city last winter.

**HOSPITAL BEQUESTS.**—The will of the late Christine Kean Griffin, of New York City, who died on July 29, was filed on Aug. 16 for probate. It contained bequests of \$1000 to the Bellevue Hospital Training-School for Nurses, and \$500 to the New York Infirmary for Women and Children.

**AWARD OF BAUMGÄRTNER PRIZES.**—It is announced that the Vienna Academy of Sciences has awarded its Baumgärtner prize to Dr. Heinrich Rubens, of the University of Berlin, and to Dr. Wilhelm Trendelenburg, professor of physiology at Innsbruck.

**IMPERIAL CANCER RESEARCH FUND.**—At a recent meeting of the general committee of the British Imperial Cancer Research Fund, Dr. Sir Rickman J. Godlee was elected a member of that committee, and Dr. Sir Thomas Barlow a member of the executive committee.

**SOCIETY FOR THE STUDY OF INEBRIETY.**—A meeting of the Society for the Study of Inebriety was held in London on July 13. Major Leonard Darwin, president of the Eugenics Education Society, delivered the principal address on "Alcoholism and Eugenics."

#### EUROPEAN WAR NOTES.

**RUSSIAN BARBER SURGEONS.**—Report from Berlin on Aug. 19 states that, owing to the present paucity of surgeons in Russia, a large number of barbers, after six weeks' of medical training, have been drafted and assigned to duty as surgeons with the Russian army. If true, this statement indicates an interesting example of surgical atavism.

**CANADIAN HOSPITAL UNITS AT DARDANELLES.**—Report from London on Aug. 19 states that three hospital units recently sent out from Canada to England have been safely transported aboard the *Asturias*, two to the Dardanelles and one to Cairo, Egypt.

**DEATH OF AN AMERICAN PHYSICIAN ON THE ARABIC.**—Of the two Americans reported to have perished at the sinking of the *Arabic*, one was a physician, Dr. Edmund F. Woods, of Jamesville, Wis. Dr. Woods went to England last fall and had spent the winter and spring at London engaged in Red Cross work.

**ENGLISH HOSPITAL TRAIN.**—The following is a recently published description of a hospital train devised by the Great Eastern Railway of England, to convey wounded soldiers from the battlefield to hospital:—

"It consists of nine passenger cars of the usual English or Continental type, about fifty-five feet long. Five are used for wards with twenty beds each, two are the dormitories of the medical staff, one is the dispensary and operating room and the ninth is the kitchen-dining room. In the case the side-doors are fastened, excepting the double ones of the baggage compartment, the partitions and seats are removed, and the beds ranged along the walls in two tiers, each one movable so that it can be properly made up, and when in place a central aisle in the ward is afforded of nearly three feet in width. The windows are shaded by curtains, and the gas lights screened. The ward flooring is covered with linoleum and those of the toilets with lead and a white enamel paint used on the wood work everywhere.

"The service car has several compartments, for clean linen, soiled clothing, etc., an operating room, a pharmacy, the water is heated by means of a gas stove, and a fresh water tank is installed at the ceiling. The dining car may be converted into a dormitory at night, having disappearing tables, and the capacity for sleepers is ten. There is steam heat throughout, and what railway trains in general need almost everywhere, fresh air well distributed. The exterior is decorated with the Red Cross."

**CHOLERA IN WÜRTTEMBERG.**—Report from Geneva, Switzerland, by way of Paris, states that a case of Asiatic cholera has recently occurred at Cannstadt, Württemberg, in the person of a German soldier recently returned from Galicia. Precautions are being taken in the canton of Neuchâtel, Switzerland, to prevent the introduction of the disease into that country from across the Austrian frontier.

#### BOSTON AND NEW ENGLAND.

**SUPERVISION OF INDUSTRIAL HYGIENE.**—An excellent work has been quietly done during the past few years by the Boston Association for the Relief and Control of Tuberculosis in the organization of clinics in factories, mills, stores and mercantile establishments, under the supervision of a visiting physician and a nurse. This movement is not only for the benefit of employees, but for the protection of the general public against various communicable diseases which may be transmitted through products of manufacture. The advantages of this medical supervision of health in factories are the early detection of disease, adaptation of work to the physical condition of the individual, and protection of fellow-employees from contagion. The advantages to the employer are in the greater efficiency of labor, greater content of workers, increased coöperation, and diminished loss of time from preventable diseases. The advantages to the general public are seen chiefly in the various food industries.

#### Obituary

EDMUND OWEN, M.B. (LOND.), F.R.C.S., LL.D. (ABERD.), D.Sc. (SHEF.)

MR. EDMUND BLACKETT OWEN, who died of cerebral hemorrhage on July 23, 1915, in London, was born at Finchfield, Essex, England, on April 7, 1847, the son of a physician. After obtaining his preparatory education at Bishop's Stortford and King's College, London, he began his medical training in 1863 at St. Mary's Hospital in that city. Later he studied in Paris, and in 1868 qualified as M.R.C.S.

From the outset, anatomy and surgery constituted his greatest interest, and as early as 1867 he was appointed demonstrator of anatomy at St. Mary's. In 1871 he became surgeon to outpatients at that institution. In 1872 he received the degree of M.B. (Lond.) and qualified as F.R.C.S. He was appointed lecturer on anatomy at St. Mary's Hospital Medical School in 1876; and in 1877, assistant surgeon to the Ormond Street Hospital for Sick Children. He became full surgeon at St. Mary's in 1882, and at Ormond Street in 1883. From 1888 to 1896 he was lecturer on surgery, in succession to Mr. A. Trehern Norton. He became consulting surgeon at Ormond Street in 1898 and at St. Mary's in 1902. He was also for a time surgeon to the French Hospital, London, and consulting surgeon to the Paddington Green Children's Hospital.

From 1905 to 1907 Mr. Owen was vice-president of the Royal College of Surgeons of England. In 1906 he delivered the Bradshaw Lecture on "Cancer: Its Treatment by Modern Methods"; and in 1911, the Hunterian Oration. In 1899 he was president of the section of diseases of children of the British Medical Association at its meeting in Portsmouth, and in 1903 president of the section of surgery at the meeting in Swansea. He was president of the Harveian Society and of the Medical Society of London.

Mr. Owen was a prolific writer on surgical topics. His text-book on "The Surgical Diseases of Children" was published in 1885, and went through three editions and a French translation. In 1890 appeared his "Manual of Anatomy for Senior Students," and in 1904 his "Cleft Palate and Hare Lip." He was author of the article on surgery in the eleventh edition of the Encyclopedia Britannica.

In recognition of his distinguished ability as a surgeon, teacher, and writer, Mr. Owen received honorary degrees from the Universities of Aberdeen and Sheffield, and was a Chevalier of the French Legion of Honor. He was correspond-

ing member of the American Orthopedic Association, the Canadian Medical Association, and the Imperial Medical Military Academy at Petrograd.

Of athletic and vigorous physique, Mr. Owen always maintained an active military interest, and at the outbreak of the present European War became surgeon-in-chief of the St. John Ambulance Brigade. In this capacity he established and organized the Epsom and Ewell War Hospital, and was intimately engaged in its work from last October until his death. He is survived by four daughters.

Mr. Herbert Page, writing of Owen in the issue of the *Lancet* of July 31, speaks as follows of his personality and of his characteristics as a surgeon:—

"His works on the surgical diseases of children, on cleft palate and harelip, and on club foot are, of course, known to everyone, and in these departments he was a recognized authority. Here as an operator he was doubtless seen at his best, while in general surgery there was marked distinction in his work. There was nothing which he feared to undertake, and difficulties, when they arose, were overcome by his courage and resourcefulness and by his knowledge of anatomy, in which he had been a teacher for many years. If onlookers might criticise they would, perhaps, have said that he gave too little thought to loss of blood, and he, of all men, honest to the backbone, would have least liked that this should not be said if it were generally believed. At first he took up an attitude of opposition to Listerian antiseptic methods, and poured contempt, both oral and written, on the ritual of the spray. He even went further than this, and at one of the societies, I think the Medical, when Lister brought forward his open operation for fractured patella, Owen, with characteristic temerity, remarked in parody of the famous saying, that it might be magnificent, but it was not surgery. His papers and addresses on innumerable subjects were always pointed and suggestive.

"The record of his long service to St. Mary's, both as a surgeon and teacher, it is not easy to condense in words. An incisive speaker, with a marvelous store of apt illustration, he was a born teacher, as hundreds of students would amply testify. There was nothing anywhere quite like Owen's class in the theatre at the close of operations; by informed questions, by encouragement and sympathy, by veiled irony and gentle ridicule, by humorous invective, by instructive anecdotes of professional experiences, he seemed to draw all the boys unto him, and not even the most stupid of 'chronics' was afraid to go to the class again. Then the transparent honesty of the man, shown not least in an impulsiveness which led him to hasty conclusions, soon to be put aside, so that he would vote tomorrow against that which he had advocated today. You forgave, you laughed, and loved him

the more. And now his life here is run, and we lay this garland on his hearse. His memory will long abide, as that of a fine Englishman, fearless, independent, straight, free from self-seeking, held in respectful veneration by countless students, trusted by his colleagues, and withal a most lovable man."

In the issue of the *British Medical Journal* for July 31 is also the following estimate of Owen's character by Mr. F. Richardson Cross, of Bristol:—

"In the passing of Edmund Owen the profession of surgery has lost one of its leaders, respected for his uprightness and high sense of duty, and honored for the active part he has taken in medical ethics, and in the progress and improvement of surgical practice and in its fine teaching. He was endowed with good health and a fine physique. His personality and ability as a student soon attracted the attention of his seniors, and he made an unusually early entry into important positions in the profession. This early recognition was not misplaced, for he rapidly became one of the most popular teachers both in anatomy and surgery. He was a well known figure in his earlier days at several meetings of the British Medical Association. I went with him to America on the occasion of the Congress at Washington in 1887, and ten years later to St. Petersburg, when we represented the Royal College of Surgeons of England at the celebration of the centenary of the foundation of the Russian Army Medical Service, and at which an enormous number of delegates from all parts of the world were present. We had the especial honor of being in a small party of European surgeons who were, one by one, received in conversation by H. I. M. the Czar and afterwards took lunch with General Kuropatkin. Owen was always in good spirits, courteous, and amusing, but not at the expense of others. I never remember his saying an unkind word of any colleague, and he showed no unfair bias against opinions he did not agree with. If he could not speak well or kindly of men or matters he did not discuss them. He was a hard worker. He wrote and spoke forcibly and well. Perhaps by nature somewhat impulsive, he carefully considered his subject with ability, shrewdness, and common sense, and, having formed his opinion, he was fearless and honest in expressing his views, which were usually sound and accurate. His work for the Royal College of Surgeons as an examiner and on the council was whole-hearted and of the highest value. He had been an active member of all the subcommittees, and the personal knowledge and long experience that he had of its affairs made him one of its most trusted leaders. He has been spared from old age, and has gone down at his post and in his work."



## Miscellany.

## LARREY'S EXPERIENCE WITH FROST BITE.

In the issue of the JOURNAL for January 21, we published an item describing Larrey's personal experience in the Battle of Waterloo. The *British Medical Journal* in commenting on the frequency of frost bite during the present trench warfare in Flanders has recently referred to Larrey's experience on this subject. In the third volume of his *Mémoires de Chirurgie Militaire*, Paris, 1812, Larrey devotes a special chapter to the subject of gangrene caused by cold.

"This *gangrène de congélation*, as he calls it, was one of the worst troubles the surgeons had to deal with after the battle of Eylau, which was fought on February 8th, 1807. Only a small number of the men of the advanced guards escaped. In some the gangrene was limited to the epidermis of the toes or heels; in others the mortification attacked the tissue of the skin more deeply over a greater or smaller extent, causing the loss of toes or of the whole foot. Larrey notes that although for some days before and after the battle the men had been exposed to the most severe frost, they did not suffer in their extremities. The Imperial Guard, in particular, had stood in the snow, hardly moving for more than twenty-four hours, yet not one of the men had his feet frozen. Then suddenly the temperature rose several degrees and a thaw set in. At once a number of the men felt intense pain in the feet and numbness, heaviness and tingling in the extremities. The affected parts were dark red in color, but not much swollen. In some cases there was slight redness towards the base of the toes and on the dorsum of the foot; in others the toes had lost movement, sensibility, and heat, and were already blackened and dried up. Those who went to the fires of the bivouacs to warm themselves suffered most; the wounded in the field hospitals escaped because they had no chance of doing this. The progress of the disease was rapid, but it seldom extended beyond the toes and only rarely spread above the malleoli. Larrey insists that sphacelus of the foot must not be confused with gangrene of the skin. It often happened, he says, that a greater or less extent of the skin of the foot became mortified, without the vessels, deep nerves, tendons, ligaments or bones becoming gangrenous; in that case the patient felt pain when the subjacent parts were touched, but he could move his feet, and the internal heat was preserved. Sphacelus, on the other hand, deprived the limb of movement, sensibility, and all the properties that characterize life; the patient could not feel his foot, and it seemed to him that a foreign body hung to his leg. If the mortification was superficial, the eschars usually became detached between the ninth and thirteenth days, leaving a sore which quickly healed. If the whole of the limb was necrosed the patient succumbed to the

sepsis which followed the separation of the eschars.

"Larrey expresses the belief that unless the patient has been exposed to the influence of the cold long enough to produce local asphyxia, and unless a second 'sedative or narcotic cause' such as alcohol is coöperating with it internally, the partial or general gangrene does not occur while the cold lasts. Travellers pass the Alps and the Pyrenees in the most rigorous cold without evil consequences as long as the temperature does not change. The Poles choose the time when the frost is likely to last to go on long and difficult journeys by caravan, but they dread such journeys at the times when the temperature is variable. During Napoleon's campaign in Holland a large number of men had their feet 'frozen,' but this happened only when thaw set in. Larrey, therefore, holds that cold is only a predisposing cause, the sudden application of heat being the determining factor. When the affected parts have already lost mobility and natural heat, and sensibility is blunted, frictions with snow and melted ice are the best means of exciting the paralyzed vessels to healthy action. He recommended that the circulation should be maintained by the successive application of spirituous and camphorated tonics, the gradual administration of cordials internally, dry and hot friction over all the body, and continuous but moderate exercise. If there were no snow or melted ice handy he advised that coarse cold red wine, vinegar, and camphorated brandy, made cold by plunging it into spring water should be used instead. In hopeless cases amputation when the line of demarcation had formed was, he said, the only course open to the surgeon."

## Correspondence.

## EUGENICS AND MODERN WARFARE.

Boston, August 27, 1915.

Mr. Editor: In an editorial in the issue of the JOURNAL for Aug. 26 you present most ably one side of the question of the eugenic, or rather dysgenic, effect, of modern methods of warfare.

On the other hand, it is probably true that other aspects of the question ought also to be considered. For better or for worse civilization has hitherto advanced, and on the whole grown better, in spite, if not as a result, of war. War between nations is after all only one manifestation of the animate struggle for existence, so impersonal, relentless, and cruel among the lower animals, yet nevertheless a biologic phenomenon even among men.

As a matter of fact war does not kill or hopelessly cripple all the best men who engage in it. Some of the young and vigorous survive to have children, and some have left issue before going to their death. It is commonly alleged that a war injures the victorious nation more than the vanquished, yet there are examples in history to the contrary. Caesar found the Belgians the bravest of all Gauls; yet, though their land, the cockpit of Europe, has been drenched with blood for nineteen centuries, their race has remained prolific, hardy, and seems to have lost none of its virile and sturdy physical and moral qualities. Moreover, the example of France has shown the tremendous regenerative powers of nature, in races as well as in individuals.

Perhaps, in the long run, a peaceable nation suffers more, eugenically speaking, from war than does a belligerent people; and the experience of time seems to have shown that ultimately the race which can beat another in war is really the superior, mentally and physically, and will survive, at least until it succumbs to other adverse conditions. Doubtless a great war is always a great calamity, yet it is one which civilization has always hitherto survived. Indeed, it is an arguable question whether civilization itself does not sometimes involve evils more perilous to the race, from a eugenic standpoint, even than those of war, which seems and in fact is, the temporary negation of civilization.

After all, this question, like many others, seems hard to settle by *a priori* theory or opinion. The thing which really makes the present European War by far the most momentous in history is not its extent and intensity, but the fact that it is probably going far to answer, by the experimental method, so many problems, biologic, eugenic, moral, philosophic, political, social. It is a costly experiment, but, since it has befallen, should hopefully be regarded not as a fatal catastrophe.

Very truly yours,  
AUDI ALTERAM PARTEM.

### AMERICAN SURGEONS IN FRANCO-PRUSSIAN WAR.

18 WEST CEDAR STREET, BOSTON.

*Mr. Editor:* May I inquire through the JOURNAL if any of your readers know of American doctors who were in the Prussian service in the Franco-Prussian War? I was stationed at Pont-à-Mouton, 17 miles from Metz. Dr. Avery, now or recently living in Brooklyn, N. Y., was with me, but I can learn of no other surviving.

WASHINGTON B. TRULL, M.D.

### BERLIN PHYSICIANS' RELIEF FUND.

#### REPORT OF TREASURER FOR THE WEEK ENDING AUG. 21.

##### CONTRIBUTIONS.

Dr. G. N. Kreider, Springfield, Ill.	\$ 5.00
Dr. Hugh A. Cuthbertson, Chicago, Ill.	10.00

Receipts for the week ending August 21.	\$15.00
Previously reported receipts.	\$7814.84
Less error, Dr. Dowd credited twice.	25.00

\$7789.84

Total receipts.	\$7804.84
Total disbursements.	\$7310.04

Balance ..... \$ 494.80

F. F. SIMPSON, M.D., Treasurer,  
7048 Jenkins Arcade Bldg.,  
Pittsburg, Pa.

### SOCIETY NOTICE.

ESSEX NORTH DISTRICT MEDICAL SOCIETY.—A quarterly meeting of the Essex North District Medical Society will be held at the Danvers State Hospital, Hathorne Station (Tel. Danvers 37) Wednesday, Sept. 8, 1915, at 4 P.M. sharp, upon invitation of Dr. Kline, Superintendent.

The meeting will be held jointly with the Essex South, and Dr. C. F. Wirthington of Boston, president of The Massachusetts Medical Society, has accepted an invitation to be present.

Paper will be presented as follows: Dr. H. A. Hare, of Philadelphia, Professor of Therapeutics and Diag-

nosis in Jefferson Medical College, upon "Certain Facts of Interest About the Cardiovascular System." Free discussion desired (five minutes each).

A buffet lunch will be served after the meeting.

Let us have a large attendance to welcome our illustrious speaker and to enjoy pleasant social intercourse with Essex South under the roof of Dr. Kline's splendid hospital.

The next meeting of the Censors will be held at Hotel Bartlett, Haverhill, Thursday, Nov. 11, 1915, at 2 P.M. sharp. Candidates for admission to the Society should bring their diploma.

The Committee on Membership of this Society invites and desires the members to invite every conscientious, skillful physician, eligible to membership in the Society, and residing within its jurisdiction, to appear before the Censors of Essex North at their meeting on Nov. 11, 1915.

V. A. REED, M.D., President.  
J. FORREST BURNHAM, M.D., Secretary,  
90 Bradford Street,  
Lawrence, Mass., August 31, 1915.

### RECENT DEATHS.

DR. AMMI WARD FOLLETT, of Somerville, Mass., died at his home in that city, August 15, aged 57 years. He was born in Royalton, Vt., January 27, 1858, was graduated from the Dartmouth Medical School in 1881 and was for five years assistant superintendent of the Butler Hospital, Providence. Dr. Follett had practised in Somerville since 1888. He was a Fellow of The Massachusetts Medical Society and of the American Medical Association and was a Mason. He is survived by a wife and two sisters.

DR. PAUL EHRLICH, who died of heart disease on Aug. 20 at Bad Homburg, was born in 1854. He was famed as the inventor of salvarsan; and in 1908 was awarded one-half of the Nobel prize in medicine for that year.

DR. CHARLES E. FINLAY, who died on Aug. 21, in Havana, Cuba, was born at Camaguey in 1833. He was a member of Reed's original Yellow Fever Commission, in 1895, but had retired from his profession, some time ago.

DR. JAMES CHARLES FAHEY died at Northampton, Mass., August 24, aged 48 years. He was a graduate of the University of Vermont College of Medicine in 1891 and had practised in Northampton since that date, being a Fellow of The Massachusetts Medical Society and of the American Medical Association. He was city physician from 1896 to 1900. He is survived by a widow and three children.

DR. JOSEPH LAWRENCE HICKS, who died recently at Flushing, Long Island, N. Y., was born in 1834. After graduating from the Polytechnic School at Troy, N. Y., he received the degree of M.D. from the New York College of Physicians and Surgeons. For many years he was visiting physician to the Flushing (L. I.) Hospital, until his retirement in 1911.

DR. EDMUND F. WOODS, who died at the sinking of the *Arabic* on Aug. 19, was born at Aldborough, Norfolk, England, in 1854. Coming to the United States in 1860, he obtained his early education in Ohio and Wisconsin. He obtained the degree of M.D. in 1880 from the Indiana Medical College, and until 1889 practised his profession in Darlington, Wis. He then removed to Janesville, Wis., where he continued until the outbreak of the European War. He is survived by his widow.

### APPOINTMENTS.

UNIVERSITY OF NEBRASKA.—Dr. Max Morse has been appointed assistant professor of biochemistry.

WESTERN RESERVE UNIVERSITY.—Dr. William Evans Brunner has been appointed professor of ophthalmology; Dr. H. H. McGregor, instructor in biochemistry; Dr. C. D. Christie, director of the clinical research laboratory; and Dr. Russell J. Collins, demonstrator of pharmacology.